THE BIRDS OF THE NATUNA ISLANDS

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INTRODUCTION

Ornithological knowledge of the interesting area known as the Natuna Islands dates from 1893. In that year the well-known collector, A. Everett, visited the group, and in September and October made the first collection of birds. Late in the summer and in the autumn (July to October) of the following year a brother of Charles Hose, the Bornean explorer, made a second collection of birds.

In 1900, between May 23 and August 13, Dr. W. L. Abbott collected for the United States National Museum some 205 specimens. His itinerary was approximately as follows, the dates given indicating the time of his visit to the different islands:

Pulo Midei (in the Southern Natuna Islands).—May 23–25.
Pulo Seraia.—May 28–29.
Brian Island.—May 31.
Sirhassen (*South Natuna*) *Island.*—May 31 to June 10.
Pulo Subi.—June 12–13.
Pulo Lingung.—June 14–17.
Pulo Kombeh.—June 19.
Bunguran (*Great Natuna*) *Island.*—June 22 to July 28.
Pulo Laut.—August 3–13.

Practically all our present information concerning the birds of these islands, at least in so far as published records are concerned, has been derived from these three collections. Another collection has recently been gathered by F. N. Chasen, of the Raffles Museum, the report on which, by C. Boden Kloss, has been courteously withheld, pending the appearance of the present study of Doctor Abbott's material.

The present report is, of course, based primarily on the specimens obtained by Doctor Abbott; but in order to bring together all that is now known concerning the distribution of birds in the Natuna Islands, the records of additional species, and of birds found on islands from which they were not reported by Doctor Abbott, are also included. These are chiefly from the papers by Dr. Ernst Hartert, who reported on the collections of Everett and Hose.[1]

[1] Nov. Zool., vol. 1, no. 2, pp. 469–483, Apr. 16, 1894; vol. 2, no. 3, pp. 466–478, Aug. 17, 1895.

Species not represented by specimens sent by Doctor Abbott are marked with an asterisk (*). Twenty-two new subspecies from the Natuna Islands are here described, in addition to one already published.[2] Two subspecies from other localities are also for the first time named (see p. 89).

As always, the writer is indebted to the officials of the United States National Museum for courtesies in connection with the preparation of this report. For the loan of specimens he wishes to thank also the Academy of Natural Sciences of Philadelphia.

Measurements are, of course, all in millimeters, and have been taken as explained in Baldwin, Oberholser, and Worley's "Measurements of Birds,"[3] but in one species (p. 39) two other measurements, self-explanatory, have been used. The names of colors in descriptions are based on Ridgway's "Color Standards and Color Nomenclature."[4]

BIBLIOGRAPHY

By reason of the limited attention that has been paid to the birds of the Natuna Islands, their ornithological literature is not extensive. The following list contains probably all the more important titles. Except for the first two by Doctor Hartert, these papers make only casual mention of birds from the Natuna Islands.

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1894. Rothschild, Walter: First glimpses of the zoology of the Natuna Islands. Nov. Zool., vol. 1, no. 2, pp. 467, 468, Apr. 16. (Mentions the occurrence of one species of bird.)

1894. Hartert, Ernst: List of the first collection of birds from the Natuna Islands. Nov. Zool., vol. 1, no. 2, pp. 469–483, Apr. 16. (Records 66 species from the Natuna Islands.)

1895. Berlepsch, Hans von: Description of two new species of the genera *Phoenicophaes* and *Spilornis*, with a note on *Oriolus consobrinus* Rams. Nov. Zool., vol. 2, no. 2, pp. 70–75, July 3.

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1906. Oberholser, Harry C.: A monograph of the genus *Collocalia*. Proc. Acad. Nat. Sci. Philadelphia, for 1906, pp. 177–212, July 26.

[2] *Hypothymis azurea gigantoptera* Oberholser, Proc. U. S. Nat. Mus., vol. 39, p. 600, Feb. 25, 1911.

[3] Sci. Publ. Cleveland Mus. Nat. Hist., vol. 2, Oct. 14, 1931.

[4] Ridgway, Robert, Color standards and color nomenclature, 43 pp., 53 pls., Washington, D. C., 1912 (published Jan. 16, 1913.)

1908. Parrot, Carl: Über eine Vogelsammlung aus Siam und Borneo. Verh. Orn. Gesellsch. in Bayern, Band 8, pp. 97–139, Nov. 14.
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1911. Hesse, Erich: Neue Spechtformen. Orn. Monatsb., vol. 19, no. 11, pp. 181–184, Nov.
1912. ————: Kritische Untersuchungen über Piciden auf Grund einer Revision des im Königlichen Zoologischen Museum zu Berlin befindlichen Spechtmaterials. Mitt. Zool. Mus. Berlin, Band 6, Heft 2, pp. 133–261, June.
1912. Stresemann, Erwin: Ornithologische Miszellen aus dem Indoaustralischen Gebiet, I. Nov. Zool., vol. 19, no. 2, pp. 311–351, Dec. 21.
1913. ————: Ornithologische Miszellen aus dem Indo-Australischen Gebiet, II. Nov. Zool., vol. 20, no. 2, pp. 289–324, June 17.
1913. ————: Die Vögel von Bali. Nov. Zool., vol. 20, no. 2, pp. 325–387, June 17.
1914. ————: Die Vögel von Seran (Ceram). Nov. Zool., vol. 21, no. 1, pp. 25–153, pls. 3–5, Feb. 25.
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PHYSIOGRAPHY

The Natuna Islands are situated in the South China Sea, northwest of Borneo, between longitude 107° 30′ and 109° 20′ E. and latitude 2° 10′ and 4° 50′ N. From Point Api, the northwestern extremity of Borneo, these islands extend in a northwesterly direction for some 200 miles. They comprise a few main islands, with numerous islets and rocks, and fall naturally into two main groups, a southern and a northern. Of the former, Sirhassen (or South Natuna), Subi, and

Saraia are the principal islands; of the latter, Bunguran (or Great Natuna) and Laut. Api Passage, about 14 miles in width, separates the South Natuna Islands from Borneo; but a deeper channel intervenes between these islands and Bunguran Island of the northern group. (See fig. 1.)

The Natuna Islands are generally rocky, but many of them are more or less flat, and some of them are covered with heavy forest. Some of the larger islands are sparsely inhabited, but the land is not well suited for cultivation. Extensive reefs surround many of the islands, making navigation dangerous.

Pulo Subi, or Flat Island, is about 12 miles in north and south length, and about 5 miles in greatest width.

Sirhassen Island, of the larger islands the one nearest Borneo, is about 9 miles long, and is partly mountainous.

Bunguran Island is the largest of all the Natuna Islands, and is about 25 miles in width. It is mostly mountainous and heavily forested. Two mountains of considerable height, Mount Bedong and Mount Ranay, are situated in the northern part of the island. The latter is commonly given as 1,890 feet in height, but Doctor Abbott thinks that it is nearer 3,000 feet.

Pulo Laut, or Sea Island, is the extreme northern large island of the group, and is sometimes considered, owing to its separation from Bunguran Island, as belonging to a third division of the Natuna Islands, the North Natuna Islands. This island is about 8 miles long, but relatively narrow.

CHECK LIST OF THE BIRDS OF THE NATUNA ISLANDS

The total number of species and subspecies of birds at present known from the Natuna Island is 127. Of these Doctor Abbott obtained specimens of 40. Doubtless a considerable number will be added when all the islands are more fully explored. The following list includes all that have been reported from the Natuna group:

1. *Demigretta sacra sacra* (Gmelin).
2. *Butorides javanicus amurensis* (Schrenck).
3. *Butorides javanicus abbotti* Oberholser.[5]
4. *Ixobrychus sinensis lepidus* (Horsfield).
5. *Polioaetus humilis humilis* (Müller and Schlegel).
6. *Cuncuma leucogastris* (Gmelin).
7. *Spilornis cheela pallidus* Walden.
8. *Accipiter virgatus virgatus* (Temminck).
9. *Lophospiza trivirgata trivirgata* (Temminck).
10. *Amaurornis phoenicura javanica* (Horsfield).
11. *Arenaria interpres oahuensis* (Bloxham).
12. *Squatarola squatarola hypomela* (Pallas).
13. *Pluvialis dominica fulva* (Gmelin).
14. *Eupoda vereda* (Gould).

[5] New subspecies; described beyond.

15. *Pagoa leschenaultii* (Lesson).
16. *Charadrius mongolus* Pallas.
17. *Leucopolius alexandrinus alexandrinus* (Linnaeus).
18. *Phaeopus phaeopus variegatus* (Scopoli).
19. *Limosa lapponica baueri* Naumann.
20. *Actitis hypoleuca* (Linnaeus).
21. *Rhyacophilus glareola* (Linnaeus).
22. *Pisobia ruficollis* (Pallas).
23. *Thalasseus bergii pelecanoides* (King).
24. *Sterna sumatrana sumatrana* Raffles.
25. *Sternula albifrons sinensis* (Gmelin).
26. *Chalcophaps indica indica* (Linnaeus).
27. *Geopelia striata striata* (Linnaeus).
28. *Muscadivores aeneus diatropurus* Oberholser.[5]
29. *Myristicivora bicolor* (Scopoli).
30. *Treron curvirostra nasica* Schlegel.
31. *Dendrophassa fulvicollis fulvicollis* (Wagler).
32. *Dendrophassa olax olax* (Temminck).
33. *Dendrophassa vernans pellochlora* Oberholser.[5]
34. *Rhamphococcyx borneensis* Blasius and Nehrkorn.
35. *Rhopodytes sumatranus* (Raffles).
36. *Zanclostomus javanicus* (Horsfield).
37. *Centropus sinensis bubutus* Horsfield.
38. *Centropus bengalensis javanensis* Dumont.
39. *Eudynamis scolopacea malayana* Cabanis and Heine.
40. *Chalcococcyx xanthorhynchus malayanus* (Raffles).
41. *Surniculus lugubris brachyurus* Stresemann.
42. *Psittacula longicauda* (Boddaert).
43. *Eurystomus orientalis calonyx* Sharpe.
44. *Halcyon pileata* (Boddaert).
45. *Sauropatis chloris cyanescens* Oberholser.
46. *Lacedo pulchella* (Horsfield).
47. *Ceyx rufidorsus rufidorsus* Strickland.
48. *Alcedo atthis bengalensis* Gmelin.
49. *Merops viridis* Linnaeus.
50. *Hydrocissa convexa zamelaena* Oberholser.[5]
51. *Anorrhinus galeritus* (Temminck).
52. *Phodilus badius arixuthus* Oberholser.[5]
53. *Ninox scutulata scutulata* (Raffles).
54. *Otus bakkamoena lempiji* (Horsfield).
55. *Batrachostomus stellatus* (Gould).
56. *Batrachostomus auritus* (Gray).
57. *Hemiprocne longipennis anochra* Oberholser.[5]
58. *Hemiprocne comata comata* (Temminck).
59. *Aerodramus vestitus amechanus* (Oberholser).
60. *Collocalia linchi cyanoptila* Oberholser.
61. *Chaetura gigantea gigantea* (Temminck).
62. *Chaetura leucopygialis* (Blyth).
63. *Pyrotrogon duvaucelii* (Temminck).
64. *Thriponax javensis javensis* (Horsfield).
65. *Mulleripicus pulverulentus pulverulentus* (Temminck).
66. *Chrysocolaptes validus xanthopygius* Finsch.

[5] New subspecies; described beyond.

67. *Micropternus badiosus* (Bonaparte).
68. *Meiglyptes tristis micropterus* Hesse.
69. *Meiglyptes tukki azaleus* Oberholser.[5]
70. *Eurylaimus javanicus* Horsfield.
71. *Eurylaimus ochromalus ochromalus* Raffles.
72. *Corydon sumatranus* (Raffles).
73. *Pitta moluccensis* (Müller).
74. *Hirundo rustica gutturalis* Scopoli.
75. *Hypurolepis javanica mesata* Oberholser.[5]
76. *Artamus leucoryn. macroterus* Oberholser.[5]
77. *Muscitrea grisola seccdens* (Stresemann).
78. *Philentoma pyrrhoptera dubia* Hartert.
79. *Rhinomyias umbratilis umbratilis* (Strickland).
80. *Arizelomyia latirostris latirostris* (Raffles).
81. *Hypothymis azurea gigantoptera* Oberholser.
82. *Culicicapa ceylonensis eophila* Oberholser.[5]
83. *Eupetes macrocerus macrocerus* Temminck.
84. *Anuropsis malaccensis malaccensis* (Hartlaub).
85. *Alcippornis brunneicauda epipolia* Oberholser.[5]
86. *Drymocataphus nigrocapitatus nigrocapitatus* (Eyton).
87. *Cyanoderma erythroptera neocara* Oberholser.[5]
88. *Mixornis rubicapilla everetti* Hartert.
89. *Mixornis rubicapilla zaperissa* Oberholser.[5]
90. *Stachyris nigriceps natunensis* Hartert.
91. *Alcippe magna* (Eyton).
92. *Alcippe cinerea bungurensis* (Hartert).
93. *Chloropsis viridis zosterops* Vigors.
94. *Chloropsis icterocephala icterocephala* (Lesson).
95. *Aegithina viridissima thapsina* Oberholser.
96. *Pycnonotus simplex perplexus* Chasen and Kloss.
97. *Pycnonotus simplex axanthizus* Oberholser.[5]
98. *Iole olivacea crypta* Oberholser.
99. *Tricholestes criniger criniger* (Blyth).
100. *Alophoixus phaeocephalus* (Hartlaub).
101. *Petrophila solitaria philippensis* (Müller).
102. *Kittacincla malabarica eumesa* Oberholser.[5]
103. *Locustella certhiola* (Pallas).
104. *Acanthopneuste borealis borealis* (Blasius).
105. *Orthotomus atrogularis major* Chasen and Kloss.
106. *Orthotomus sericeus rubicundulus* Chasen and Kloss.
107. *Budytes flavus taivanus* Swinhoe.
108. *Gracula religiosa religiosa* (Linnaeus).
109. *Lamprocorax panayensis heterochlorus* Oberholser.
110. *Dissemurus paradiseus endomychus* Oberholser.[5]
111. *Graucalus sumatrensis bungurensis* Hartert.
112. *Arachnothera longirostra atita* Oberholser.[5]
113. *Arachnothera longirostra rothschildi* van Oort.
114. *Anthreptes simplex euthapsinus* Oberholser.[5]
115. *Anthreptes hypogrammicus hypogrammicus* (Müller).
116. *Anthreptes malacensis erixanthus* Oberholser.[5]
117. *Chalcostetha calcostetha halitypa* Oberholser.[5]

[5] New subspecies; described beyond.

118. *Chalcoparia singalensis borneana* Kloss.
119. *Cinnyris ornata zapega* Oberholser.[5]
120. *Cinnyris brasiliana axantha* Oberholser.[5]
121. *Aethopyga siparaja ochropyrrha* Oberholser.
122. *Munia atricapilla brunneiceps* Walden.
123. *Uroloncha fuscans* (Cassin).
124. *Charitociris maculata maculata* (Temminck).
125. *Charitociris xanthopygia xanthopygia* (Salvadori).
126. *Charitociris percussa ignicapilla* (Eyton).
127. *Dicaeum trigonostigmum megastomum* Hartert.

DISTRIBUTION OF NATUNA BIRDS BY ISLANDS

Bunguran Island, as would naturally be expected, has the largest bird fauna of any of the islands of the Natuna group. Part of this apparent difference may, however, be due to the greater amount of collecting that has been done on this island. From most of the smaller islands there are no bird records at all, and all the islands on which collections have been made, except Bunguran and Sirhassen, have small lists of birds. It is therefore evident that much remains to be learned of this zoologically interesting group of islands.

So far as our present knowledge goes, only three species are represented in the Natuna Islands by more than one subspecies. These are *Mixornis rubicapilla*, with *Mixornis rubicapilla everetti* on Bunguran Island and *Mixornis rubicapilla zaperissa* on Pulo Laut and neighboring small islands; *Pycnonotus simplex*, with *Pycnonotus simplex axanthizus* on Bunguran and other northern islands, and *Pycnonotus simplex perplexus* on Sirhassen and other southern islands; and *Arachnothera longirostra*, with *Arachnothera longirostra atita* on Sirhassen Island and *Arachnothera longirostra rothschildi* on Bunguran Island and Pulo Lingung.

Of the 11 islands from which we have any records of birds, *Myristicivora bicolor* is known to occur on six, including Sirhassen Island and Pulo Laut; and this species is thus the bird of widest known distribution in the Natuna Archipelago. One other species, *Anthreptes malacensis erixanthus* has been found on five islands, inclusive of Bunguran and Sirhassen; and the following birds have been reported from four islands: *Muscadivores aeneus diatropurus, Psittacula longicauda, Thalasseus bergii pelecanoides, Muscitrea grisola secedens,* and *Lamprocorax panayensis heterochlorus.* No other species have been reported from more than three islands.

A considerable number of species occur on Bunguran and other northern islands that have not yet been detected on Sirhassen, the other and southernmost of the largest two islands; but as already intimated this may be due to less intensive collecting on Sirhassen

[5] New subspecies; described beyond.

Island. On the other hand, the following birds that inhabit Sirhassen have not been reported from Bunguran or any of the other northern islands:

Amaurornis phoenicura javanica.
Chalcophaps indica indica.
Geopelia striata striata.
Dendrophassa fulvicollis fulvicollis.
Muscitrea grisola secedens.
Pycnonotus simplex perplexus.
Orthotomus sericeus rubicundulus.
Arachnothera longirostra atita.
Cinnyris ornata zapega.

Lists of all the birds recorded from the several islands are given below.

BRIAN ISLAND

Muscitrea grisola secedens.
Pycnonotus simplex perplexus
Orthotomus sericeus rubicundulus
Anthreptes malacenis erixanthus.
Chalcostetha calcostetha halitypa.

BUNGURAN ISLAND

Butorides javanicus amurensis.
Polioaetus humilis humilis.
Spilornis cheela pallidus.
Accipiter virgatus virgatus.
Lophospiza trivirgata trivirgata.
Arenaria interpres oahuensis.
Squatarola squatarola hypomela.
Pluvialis dominica fulva.
Eupoda vereda.
Pagoa leschenaultii.
Charadrius mongolus.
Leucopolius alexandrinus alexandrinus.
Phaeopus phaeopus variegatus.
Limosa lapponica baueri.
Actitis hypoleuca.
Rhyacophilus glareola.
Pisobia ruficollis.
Thalasseus bergii pelecanoides.
Sterna sumatrana sumatrana.
Muscadivores aeneus diatropurus.
Myristicivora bicolor.
Treron curvirostra nasica.
Dendrophassa olax olax.
Dendrophassa vernans pellochlora.
Rhamphococcyx borneensis.
Rhopodytes sumatranus.
Zanclostomus javanicus.
Centropus sinensis bubutus.
Centropus bengalensis javanensis.
Chalcococcyx xanthorhynchus malayanus.
Surniculus lugubris brachyurus.
Psittacula longicauda.
Eurystomus orientalis calonyx.
Halcyon pileata.
Sauropatis chloris cyanescens.
Lacedo pulchella.
Ceyx rufidorsus rufidorsus.
Alcedo atthis bengalensis.
Merops viridis.
Hydrocissa convexa zamelaena.
Anorrhinus galeritus.
Phodilus badius arixuthus.
Ninox scutulata scutulata.
Otus bakkamoena lempiji.
Batrachostomus stellatus.
Batrachostomus auritus.
Hemiprocne longipennis anochra.
Hemiprocne comata comata.
Aerodramus vestitus amechanus.
Collocalia linchi cyanoptila.
Chaetura gigantea gigantea.
Chaetura leucopygialis.
Pyrotrogon duvaucelii.
Thriponax javensis javensis.
Mulleripicus pulverulentus pulverulentus.
Chrysocolaptes validus xanthopygius.
Micropternus badiosus.
Meiglyptes tristis micropterus.
Meiglyptes tukki azaleus.
Eurylaimus javanicus.
Eurylaimus ochromalus ochromalus.
Corydon sumatranus.
Pitta moluccensis.
Hirundo rustica gutturalis.
Hypurolepis javanica mesata.
Artamus leucoryn. macroterus.
Philentoma pyrrhoptera dubia.
Rhinomyias umbratilis umbratilis.
Arizelomyia latirostris latirostris.
Hypothymis azurea gigantoptera.
Culicicapa ceylonensis cophila.
Eupetes macrocerus macrocerus.

Anuropsis malaccensis malaccensis.
Alcippornis brunneicauda epipolia.
Drymocataphus nigrocapitatus nigrocapitatus.
Cyanoderma erythroptera neocara.
Mixornis rubicapilla everetti.
Stachyris nigriceps natunensis.
Alcippe magna.
Alcippe cinerea bungurensis.
Chloropsis viridis zosterops.
Chloropsis icterocephala icterocephala.
Aegithina viridissima thapsina.
Pycnonotus simplex axanthizus.
Iole olivacea crypta.
Tricholestes criniger criniger.
Alophoixus phaeocephalus.
Petrophila solitaria philippensis.
Kittacincla malabarica eumesa.
Acanthopneuste borealis borealis.
Orthotomus atrogularis major.
Budytes flavus taivanus.
Gracula religiosa religiosa.
Lamprocorax panayensis heterochlorus.
Dissemurus paradiscus endomychus.
Graucalus sumatrensis bungurensis.
Arachnothera longirostra rothschildi.
Anthreptes simplex cuthapsinus.
Anthreptes hypogrammicus hypogrammicus.
Anthreptes malacensis crixanthus.
Chalcostetha calcostetha halitypa.
Chalcoparia singalensis borneana.
Cinnyris brasiliana axantha.
Aethopyga siparaja ochropyrrha.
Munia atricapilla brunneiceps.
Uroloncha fuscans.
Charitociris maculata maculata.
Charitociris xanthopygia xanthopygia.
Charitociris percussa ignicapilla.
Dicaeum trigonostigmum megastomum.

PULO KOMBEH

Mixornis rubicapilla zaperissa.

PULO LAUT

Cuncuma leucogastris.
Charadrius mongolus.
Thalasseus bergii pelecanoides.
Sternula albifrons sinensis.
Muscadivores aeneus diatropurus.
Myristicivora bicolor.
Dendrophassa vernans pellochlora.
Eudynamis scolopacea malayana.
Psittacula longicauda.
Mixornis rubicapilla zaperissa.
Pycnonotus simplex axanthizus.
Tricholestes criniger criniger.
Lamprocorax panayensis heterochlorus.
Aethopyga siparaja ochropyrrha.

PULO LINGUNG

Ceyx rufidorsus rufidorsus.
Hydrocissa convexa zamclaena.
Hemiprocne longipennis anochra.
Hypothymis azurea gigantoptera.
Mixornis rubicapilla zaperissa.
Pycnonotus simplex axanthizus.
Kittacincla malabarica eumesa.
Orthotomus atrogularis major.
Dissemurus paradiseus endomychus.
Arachnothera longirostra rothschildi.

PULO MIDEI

Ixobrychus sinensis lepidus.
Muscadivores aeneus diatropurus.
Gracula religiosa religiosa.
Lamprocorax panayensis heterochlorus.
Cinnyris brasiliana axantha.

PULO PANDAK

Demigretta sacra sacra.
Charadrius mongolus.
Pisobia ruficollis.
Thalasseus bergii pelecanoides.
Sterna sumatrana sumatrana.
Myristicivora bicolor.
Orthotomus atrogularis major.
Anthreptes malacensis crixanthus.

PULO PANJANG

Cuncuma leucogastris.
Thalasseus bergii pelecanoides.
Myristicivora bicolor.
Culicicapa ceylonensis cophila.
Anthreptes malacensis crixanthus.

PULO SERAIA

Butorides javanicus abbotti.
Myristicivora bicolor.
Hypurolepis javanica mesata.
Muscitrea grisola secedens.
Cinnyris ornata zapega.
Cinnyris brasiliana axantha.

SIRHASSEN ISLAND

Accipiter virgatus virgatus.
Amaurornis phoenicura javanica.
Pluvialis dominica fulva.
Chalcophaps indica indica.
Geopelia striata striata.
Muscadivores aeneus diatropurus.
Myristicivora bicolor.
Dendrophassa fulvicollis fulvicollis.
Dendrophassa vernans pellochlora.
Eudynamis scolopacea malayana.
Psittacula longicauda.
Sauropatis chloris cyanescens.
Hirundo rustica gutturalis.
Artamus leucoryn. macroterus.
Muscitrea grisola secedens.
Arizelomyia latirostris latirostris.
Hypothymis azurea gigantoptera.
Pycnonotus simplex perplexus.
Locustella certhiola.
Orthotomus sericeus rubicundulus.
Budytes flavus taivanus.
Gracula religiosa religiosa.
Lamprocorax panayensis heterochlorus.
Arachnothera longirostra atita.
Anthreptes malacensis erixanthus.
Cinnyris ornata zapega.
Urolonchа fuscans.

PULO SUBI

Psittacula longicauda.
Sauropatis chloris cyanescens.
Artamus leucoryn. macroterus.
Muscitrea grisola secedens.
Pycnonotus simplex perplexus.
Orthotomus sericeus rubicundulus.
Cinnyris ornata zapega.

FAUNAL RELATIONSHIPS

As would of course be expected, the faunal relationships of the Natuna Islands are with the islands in the South China Sea and the larger land masses, islands, and mainland surrounding this body of water.

Of the 127 birds known from the Natuna Islands, 19 are not known to breed, and therefore are to be disregarded in any comparison designed to indicate faunal relationships. These species are as follows:

Butorides javanicus amurensis.
Arenaria interpres oahuensis.
Squatarola squatarola hypomela.
Pluvialis dominica fulva.
Eupoda vereda.
Pagoa leschenaultii.
Charadrius mongolus.
Leucopolius alexandrinus alexandrinus.
Phaeopus phaeopus variegatus.
Limosa lapponica baueri.
Actitis hypoleuca.
Rhyacophilus glareola.
Pisobia ruficollis.
Eurystomus orientalis calonyx.
Hirundo rustica gutturalis.
Petrophila solitaria philippensis.
Locustella certhiola.
Acanthopneuste borealis borealis.
Budytes flavus taivanus.

The 108 remaining species and subspecies, would, therefore, form the basis of faunal considerations; and for such purpose there is relatively so little difference between the northern and southern groups

of islands in the Natunas that comparisons are probably best made with the Natuna Archipelago as a whole.

Of the resident forms, the following 26 are, so far as known, peculiar to the Natuna Islands:

Muscadivores aeneus diatropurus.
Dendrophassa vernans pellochlora.
Hydrocissa convexa zamelaena.
Phodilus badius arixuthus.
Meiglyptes tukki azaleus.
Artamus leucoryn. macroterus.
Philentoma pyrrhoptera dubia.
Hypothymis azurea gigantoptera.
Alcippornis brunneicauda epipolia.
Cyanoderma erythroptera neocara.
Mixornis rubicapilla everetti.
Mixornis rubicapilla zaperissa.
Stachyris nigriceps natunensis.
Alcippe cinerea bungurensis.
Pycnonotus simplex axanthizus.
Kittacincla malabarica eumesa.
Orthotomus sericeus rubicundulus.
Dissemurus paradiscus endomychus.
Graucalus sumatrensis bungurensis.
Arachnothera longirostra atita.
Arachnothera longirostra rothschildi.
Anthreptes simplex euthapsinus.
Anthreptes malacensis erixanthus.
Cinnyris ornata zapega.
Cinnyris brasiliana axantha.
Dicaeum trigonostigmum megastomum.

Of these,[6] 12 have their nearest relatives in Borneo, 11 in the Malay Peninsula, 9 in Sumatra, 4 in the Anamba Islands, 2 in Java, and none in Indo-China.

Furthermore, the following six Natuna subspecies have been found elsewhere on only the Anamba Islands in the South China Sea, although, of course, their nearest relatives occur on the large islands or the adjacent mainland:

Aerodramus vestitus amechanus.
Aegithina viridissima thapsina.
Iole olivacea crypta.
Orthotomus atrogularis major.
Lamprocorax panayensis heterochlorus.
Aethopyga siparaja ochropyrrha.

The 76 remaining birds of the Natuna Islands belong to species some of which are confined to a limited East Indian area, while others have a wide range in the Oriental and Australasian regions. Of these Natuna species and subspecies, 22 occur in the Anamba Islands, 70 on Borneo, 59 on Sumatra, 58 in the Malay Peninsula, 34 on Java, and 15 in Indo-China.

From these comparisons it will be evident that the Natuna Islands, in so far at least as our present knowledge of their ornithology extends, are faunally most nearly related to Borneo; somewhat less so, and about equally, to the Malay Peninsula and Sumatra; about half as much to Java as to Sumatra; still less so to the Anamba Islands; and least of all to Indo-China.

Table 1 presents in more graphic form the data elaborated in the preceding paragraphs. In this the first column is reserved for endemic Natuna forms; in the other columns the occurrence of the Natuna birds themselves is indicated by an asterisk (*); and of their nearest relatives by a dagger (†).

[6] In these comparisons it is obvious that the nearest relatives of certain forms occur in more than one of the areas mentioned.

TABLE 1.—*Faunal relationships of the resident birds of the Natuna Islands*

Species or subspecies	Peculiar to the Natuna Islands	Anamba Islands	Malay Peninsula	Borneo	Java	Sumatra	Indo-China
Demigretta sacra sacra		•	•	•	•	•	•
Butorides javanicus abbotti		•	•			•	•
Ixobrychus sinensis lepidus				•	•	•	
Polioaetus humilis humilis			•	•	•	•	
Cuncuma leucogastris		•	•	•	•	•	•
Spilornis cheela pallidus		•		•			
Accipiter virgatus virgatus				•	•	•	
Lophospiza trivirgata trivirgata			•	•	•	•	
Amaurornis phoenicura javanica				•	•	•	
Thalasseus bergii pelecanoides		•	•	•	•	•	
Sterna sumatrana sumatrana		•	•	•	•	•	•
Sternula albifrons sinensis			•	•	•	•	•
Chalcophaps indica indica		•	•	•	•	•	•
Geopelia striata striata		•	•	•	•	•	
Muscadivores aeneus diatropurus	•					†	
Myristicivora bicolor		•	•	•	•	•	•
Treron curvirostra nasica				•		•	
Dendrophassa fulvicollis fulvicollis			•	•		•	•
Dendrophassa olax olax			•	•	•	•	
Dendrophassa vernans pellochlora	•	†					
Rhamphococcyx borneensis				•			
Rhopodytes sumatranus			•	•	•	•	
Zanclostomus javanicus			•	•	•	•	
Centropus sinensis bubutus			•	•	•	•	
Centropus bengalensis javanensis			•	•	•	•	
Eudynamis scolopacea malayana			•	•	•	•	•
Chalcococcyx xanthorhynchus malayanus			•	•	•	•	
Surniculus lugubris brachyurus			•	•	•	•	
Psittacula longicauda		•	•	•		•	
Halcyon pileata			•	•	•	•	•
Sauropatis chloris cyanescens		•		•		•	
Lacedo pulchella			•		•	•	
Ceyx rufidorsus rufidorsus		•	•	•		•	
Alcedo atthis bengalensis		•	•	•	•	•	•
Merops viridis			•	•	•	•	•
Hydrocissa convexa zamelaena	•		†	†	†	†	
Anorrhinus galeritus			•	•		•	
Phodilus badius arixuthus	•		†				
Ninox scutulata scutulata			•	•		•	
Otus bakkamoena lempiji			•	•	•	•	
Batrachostomus stellatus			•	•		•	
Batrachostomus auritus			•	•		•	
Hemiprocne longipennis anochra		•	•				
Hemiprocne comata comata		•	•	•	•	•	
Aerodramus vestitus amechanus		•					
Collocalia linchi cyanoptila			•	•			
Chaetura gigantea gigantea			•	•	•	•	
Chaetura leucopygialis			•	•		•	
Pyrotrogon duvaucelii			•	•		•	
Thriponax javensis javensis			•	•	•	•	
Mulleripicus pulverulentus pulverulentus			•	•	•	•	
Chrysocolaptes validus xanthopygius			•	•		•	
Micropternus badiosus				•			
Meiglyptes tristis micropterus				•			
Meiglyptes tukki azaleus	•		†				
Eurylaimus javanicus			•	•	•	•	•
Eurylaimus ochromalus ochromalus			•	•		•	

TABLE 1.—*Faunal relationships of the resident birds of the Natuna Islands*—Cont.

Species or subspecies	Peculiar to the Natuna Islands	Anamba Islands	Malay Peninsula	Borneo	Java	Sumatra	Indo-China
Corydon sumatranus			*	*		*	
Pitta moluccensis			*	*		*	*
Hypurolepis javanica mesata				*			
Artamus leucoryn. macroterus	*			†			
Muscitrea grisola secedens			*	*	*		
Philentoma pyrrhoptera dubia	*		†	†		†	
Rhinomyias umbratilis umbratilis				*			
Arizelomyia latirostris latirostris			*	*		*	*
Hypothymis azurea gigantoptera	*		†				
Culicicapa ceylonensis eophila				*			
Eupetes macrocerus macrocerus			*	*		*	
Anuropsis malaccensis malaccensis		*	*				
Alcippornis brunneicauda epipolia	*					†	
Drymocataphus nigrocapitatus nigrocapitatus			*			*	
Cyanoderma erythroptera neocara	*		†				
Mixornis rubicapilla everetti	*	†					
Mixornis rubicapilla zaperissa	*					†	
Stachyris nigriceps natunensis	*		†				
Alcippe magna			*	*		*	
Alcippe cinerea bungurensis	*		†	†		†	
Chloropsis viridis zosterops			*	*		*	
Chloropsis icterocephala icterocephala			*	*		*	
Aegithina viridissima thapsina		*					
Pycnonotus simplex perplexus				*			
Pycnonotus simplex axanthizus	*	†					
Iole olivacea crypta		*					
Tricholestes criniger criniger			*	*	*	*	
Alophoixus phaeocephalus			*	*		*	
Kittacincla malabarica eumesa	*			†			
Orthotomus atrogularis major		*					
Orthotomus sericeus rubicundulus	*		†	†	†	†	
Gracula religiosa religiosa			*	*	*	*	
Lamprocorax panayensis heterochlorus		*					
Dissemurus paradiseus endomychus	*		†				
Graucalus sumatrensis bungurensis	*			†		†	
Arachnothera longirostra atita	*			†			
Arachnothera longirostra rothschildi	*			†			
Anthreptes simplex euthapsinus	*			†			
Anthreptes hypogrammicus hypogrammicus			*			*	
Anthreptes malacensis erixanthus	*			†			
Chalcostetha calcostetha halitypa				*			
Chalcoparia singalensis borneana				*			
Cinnyris ornata zapega	*			†			
Cinnyris brasiliana axantha	*	†					
Aethopyga siparaja ochropyrrha		*					
Munia atricapilla brunneiceps				*			
Uroloncha fuscans				*			
Charitociris maculata maculata			*	*		*	
Charitociris xanthopygia xanthopygia				*			
Charitociris percussa ignicapilla			*	*		*	
Dicaeum trigonostigmum megastomum	*		†				
Totals, including both Natuna forms and nearest relatives	26	26	69	82	36	67	15

Family ARDEIDAE

*DEMIGRETTA SACRA SACRA (Gmelin) [6a]

[*Ardea*] *sacra* GMELIN, Systema naturae, vol. 1, pt. 2, p. 640, Apr. 20, 1789. ("Tahiti.")

This species has been recorded from Pulo Pandak by Doctor Hartert.[7]

*BUTORIDES JAVANICUS AMURENSIS (Schrenck)

Ardea (*Butorides*) *virescens* var. *amurensis* SCHRENCK, Reisen und Forschungen im Amur-Lande, Band 1, Lief. 2, Vögel des Amur-Landes, p. 441, June, 1860. ("Amur.")

This subspecies has been recorded by Doctor Hartert[8] as a migrant in the Natuna Islands, presumably on Bunguran Island, since he first recorded the species from that island under the name *Butorides javanicus*.[9]

BUTORIDES JAVANICUS ABBOTTI,[10] new subspecies

Subspecific characters.—Similar in size to *Butorides javanicus carcinophilus* from the Philippine Islands, but coloration of lower parts and sides of neck decidedly paler.

Type.—Adult male, U.S.N.M. No. 172899. Pulo Lankawi, western Malay Peninsula, December 4, 1899; Dr. W. L. Abbott.

Geographic distribution.—Malay Peninsula, Sumatra, India, southern China, Cochin China, and Natuna Islands.

Measurements of type.—Total length in flesh, 445 mm.; wing, 177; tail, 65; exposed culmen, 60; height of bill at base, 14; tarsus, 48; middle toe without claw, 43.5.

Remarks.—A single specimen, a male, U.S.N.M. No. 174644, was taken by Doctor Abbott on Pulo Seraia, Natuna Islands, May 29, 1900. Length in flesh, 445 mm. It is a bird of apparently the previous year, which has not yet acquired the adult plumage. The foreneck and even the posterior lower parts are more or less brownish, the crest dull and anteriorly streaked narrowly with dull white, the dorsal plumes not well developed, and many of the primaries and secondaries with conspicuous white terminal spots. Some of its

[6a] Species preceded by an asterisk (*) are not represented by specimens sent by Doctor Abbott.
[7] Nov. Zool., vol. 2, no. 3, p. 477, Aug. 17, 1895.
[8] Die Vögel der paläarktischen Fauna, Heft 10 (Band 2, Heft 4), p. 1250, Mar., 1920.
[9] Nov. Zool., vol. 1, no. 2, p. 483, Apr. 16, 1894.
[10] Named for Dr W. L. Abbott.

contour feathers are in process of molt. Its measurements are as follows: Wing, 165.5 mm.; tail, 59.5; exposed culmen, 59; height of bill at base, 14; tarsus, 44.5; middle toe without claw, 42.

The Natuna bird belongs apparently to the Malay Peninsula race, which differs from the typical Javan *Butorides javanicus javanicus* in larger size and paler coloration.

Apparently the only name heretofore given to this form is *Egretta chloriceps* Hodgson,[11] which is unfortunately unavailable for use, since it was proposed as follows:

"Egretta chloriceps v[el]. virescens auct."

This would seem to make the specific name *chloriceps* a synonym of *Butorides virescens*. The Malay Peninsula bird, therefore, requires to be named.

The 14 apparently recognizable races of *Butorides javanicus* are as follows:

1. *Butorides javanicus javanicus* (Horsfield).

Ardea Javanica Horsfield, Trans. Linn. Soc. London, vol. 13, pt. 1, p. 190, May, 1821. ("Java.")

Geographic distribution.—Java.

2. *Butorides javanicus actophilus* Oberholser.

Butorides javanicus actophilus Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 1, Oct. 26, 1912. ("North Pagi Island.")

Geographic distribution.—Pagi Islands, Barussan Islands, western Sumatra.

3. *Butorides javanicus icastopterus* Oberholser.

Butorides javanicus icastopterus Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 1, Oct. 26, 1912. ("Simalur Island.")

Geographic distribution.—Simalur Island, Barussan Islands, western Sumatra.

4. *Butorides javanicus albidulus* Bangs.

Butorides albidulus Bangs, Proc. Biol. Soc. Washington, vol. 26, p. 93, May 3, 1913. ("Suvadiva Atoll, southern Maldives.")

Geographic distribution.—Maldive Islands, off southwestern India.

5. *Butorides javanicus abbotti* Oberholser.

Butorides javanicus abbotti Oberholser, antea, p. 14.

Geographic distribution.—India and the Malay Peninsula, north to southern China, Nepal, and Kashmir; west to Sind and the Laccadive Islands; south to Ceylon, Sumatra, and Nias Island; and east to the Natuna Islands and Cochin China.

6. *Butorides javanicus spodiogaster* Sharpe.

Butorides spodiogaster Sharpe, Bull. Brit. Orn. Club., vol. 3, no. 14, p. xvii, Jan. 25, 1894. ("Andaman Islands and Nicobars.")

Geographic distribution.—Andaman Islands and Nicobar Islands.

[11] Gray's Zoological Miscellany, p. 86, 1844.

7. *Butorides javanicus amurensis* (Schrenck).

Ardea (Butorides) virescens, var. *amurensis* Schrenck, Reisen und Forschungen im Amur-Lande, Band 1, Lief. 2, Vögel des Amur-Landes, p. 441, June, 1860. ("Amur.")

Butorides schrenckii Bogdanow, Conspectus avium Imperii Rossici, Fasc. 1, p. 115, Feb. to Nov., 1884. ("La Région du fleuve Amour; le pays Oussourien.")

Geographic distribution.—Breeds in eastern Asia north to Japan and Amur; west and south to central eastern China; and east to the Bonin Islands. Winters south to Formosa, the Natuna Islands, Philippine Islands, Celebes, and Borneo.

8. *Butorides javanicus carcinophonus* Oberholser.

Butorides javanicus carcinophonus Oberholser, Journ. Washington Acad. Sci., vol. 14, no. 13, p. 294, July 19, 1924. ("Pulo Alanga, eastern Borneo.")

Geographic distribution.—Borneo, including its coastal islands.

9. *Butorides javanicus carcinophilus* Oberholser.

Butorides javanicus carcinophilus Oberholser, Journ. Washington Acad. Sci., vol. 14, no. 13, p. 294, July 19, 1924. ("Casiguran, Luzon Island, Philippine Islands.")

Geographic distribution.—Philippine Islands to Celebes.

10. *Butorides javanicus moluccarum* Hartert.

B[utorides]. striatus moluccarum Hartert, Die Vögel der paläarktischen Fauna, Heft 10 (Band 2, Heft 4), p. 1251, Mar., 1920. ("Buru.")

Geographic distribution.—Molucca Islands, to Timor and Flores.

11. *Butorides javanicus stagnatilis* (Gould).

Ardetta stagnatilis Gould, Proc. Zool. Soc. London, for 1847, p. 221, Mar. 29, 1848. ("Port Essington.")

Geographic distribution.—Northwestern Australia and Northern Territory, Australia.

12. *Butorides javanicus littleri* Mathews.

Butorides javanica littleri Mathews, Nov. Zool., vol. 18, no. 3, p. 233, Jan. 31, 1912. ("North Queensland (Cooktown).")

Geographic distribution.—Northern Queensland, Australia; north to the Solomon Islands, New Guinea, Aru Islands, and Kei Islands.

13. *Butorides javanicus macrorhynchus* (Gould).

Ardetta macrorhyncha Gould, Birds of Australia, vol. 6, pt. 31, pl. 66 and text, June 1, 1848. ("Australia east coast. Garden Island near the mouth of the Hunter"; type locality given as Gosford, New South Wales, by Mathews, Nov. Zool., vol. 18, no. 3, p. 233, Jan. 31, 1912).

Geographic distribution.—New South Wales.

14. *Butorides javanicus patruelis* (Peale).

Ardea patruelis Peale, United States exploring expedition, vol. 8, p. 216, 1848. ("Tahiti.")

Geographic distribution.—Southern Pacific islands, from Tahiti to the Fiji Islands and New Caledonia.

IXOBRYCHUS SINENSIS LEPIDUS (Horsfield)

Ardea lepida Horsfield, Trans. Linn. Soc. London, vol. 13, pt. 1, p. 190, May, 1821. ("Java.")

The single specimen examined from the Natuna Islands is a female, not quite adult, U.S.N.M. No. 174655, collected by Doctor Abbott on Pulo Midei, May 23, 1900. "Feet pale green; iris yellow." Length in flesh, 387 mm. It appears to belong to the Javan race, rather than to *Ixobrychus sinensis pulcher* Hume, described from the Andaman Islands. Its measurements are as follows: Wing, 134.5; tail, 47; exposed culmen, 56; height of bill at base, 11.2; tarsus, 46; middle toe without claw, 40.5 mm. The species appears hitherto not to have been recorded from the Natuna Islands.

This species of bittern is divisible into a number of races, of which at least seven seem to be now recognizable, as follows:

1. *Ixobrychus sinensis sinensis* (Gmelin).

[*Ardea*] *Sinensis* Gmelin, Systema naturae, vol. 1, pt. 2, p. 642, Apr. 20, 1789. ("Sina.")

Ardea melanotis Gray, The genera of birds, vol. 3, Appendix, p. 25, May, 1849, (in text) (as synonym of *Ardea sinensis*) (Cuvier MS.).

Ardea melanoptera Lesson, Traité d'ornithologie, p. 573, June 11, 1931 (in text) (synonym of *Ardea sinensis* Gmelin) (Cuvier MS.).

Ardea melanophis Pucheran, Rev. et Mag. Zool., ser. 2, vol. 3, no. 8, p. 375, Aug., 1851 (in text) (synonym of *Ardea sinensis* Gmelin) (Cuvier MS.).

Geographic distribution.—China to Cochin China and [?] Siam.

2. *Ixobrychus sinensis pulcher* (Hume).

[*Ardea*] *pulchra* Hume, Stray Feathers, vol. 1, nos. 2, 3, 4, p. 309, Feb., 1873 (in text). ("Port Blair [South Andaman Island] Andamans.")

Geographic distribution.—India, Ceylon, Burma, Andaman Islands, Nicobar Islands, and Malay Peninsula to Singapore.

3. *Ixobrychus sinensis lepidus* (Horsfield).

Ardea lepida Horsfield, Trans. Linn. Soc. London, vol. 13, pt. 1, p. 190, May, 1821. ("Java.")

Geographic distribution.—Java, east to Timor, north to Borneo and the Natuna Islands, and west to Sumatra.

4. *Ixobrychus sinensis astrologus* Wetmore.

Ixobrychus sinensis astrologus Wetmore, Proc. Biol. Soc. Washington, vol. 31, p. 83, June 29, 1918. ("Paete, Laguna, Luzon, Philippine Islands.")

Geographic distribution.—Philippine Islands, south to Celebes and Ceram and east to New Guinea and New Britain.

5. *Ixobrychus sinensis moorei* Wetmore.

Ixobrychus sinensis moorei Wetmore, Bull. Mus. Comp. Zoöl., vol. 63, no 2, p. 173, June, 1919. ("Polynesia; Middle Caroline Islands; Truk Group, Uala.")

Geographic distribution.—Caroline Islands and (?) Pelew Islands.

6. *Ixobrychus sinensis bryani* (Seale).

Ardetta bryani Seale, Occas. Papers Bernice Pauahi Bishop Mus., vol. 1, no. 3, p. 27, 1901. ("Marianas" [Guam].)

Geographic distribution.—Marianas Islands.

7. *Ixobrychus sinensis luteolus* (Stejneger).

Ardetta luteola Stejneger, Proc. U. S. Nat. Mus., vol. 10, p. 290, Aug. 3, 1887 (in text). ("Japan"; type from Wakayama, Kii, Hondo Island.)

Geographic distribution.—Japan.

Family ACCIPITRIIDAE

*POLIOAETUS HUMILIS HUMILIS (Müller and Schlegel)

Falco humilis S. Müller and Schlegel, Verhandelingen Natuurlijke Geschiedenis der Nederlandsche overzeeische Bezittingen, vol. 2, Zoologie, Aves, no. 4, p. 47, pl. 6, 1845 (before May). ("Sumatra.")

A single specimen of this rare eagle was obtained in September, 1894, at 1,000 feet altitude on Mount Ranay, Bunguran Island, and recorded by Doctor Hartert.[12]

*CUNCUMA LEUCOGASTRIS (Gmelin)

[*Falco*] *leucogaster* Gmelin, Systema naturae, vol. 1, pt. 1, p. 257, July 25, 1788. (No locality; type locality given by Mathews as New South Wales, Australia.)

Specimens of this eagle from Pulo Panjang and Pulo Laut have been recorded by Doctor Hartert.[13]

SPILORNIS CHEELA PALLIDUS Walden

Spilornis pallidus Walden, Ibis, ser. 3, vol. 2, no. 8, p. 363, Oct., 1872 (in text). ("Jambusan," "Northern Borneo.")

One adult female, collected by Doctor Abbott, is U.S.N.M. No. 174675, from Bunguran Island, July 2, 1900. "Feet yellow; claws black; iris yellow, naked lores pale yellow; bill horn blue, black along culmen; cere greenish yellow." Length in flesh, 489 mm. Its stomach contained remains of lizards (*Malbonia* sp.?). Its measurements are as follows: Wing, 320; tail, 207; exposed culmen with cere, 31; tarsus, 78.5 mm.

Judged from this lone specimen, the Natuna Islands *Spilornis* is inseparable from that of Borneo, as Doctor Hartert has already indicated.[14]

The following 15 races of *Spilornis cheela* seem now to be recognizable:

1. *Spilornis cheela cheela* (Latham).

Falco Cheela Latham, Index ornithologicus, vol. 1, p. 14, 1790. ("India" [Lucknow, *fide* Baker, Journ. Bombay Nat. Hist. Soc., vol. 28, no. 3, p. 586, June 20, 1922].)

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[12] Nov. Zool., vol. 2, no. 3, p. 476, Aug. 17, 1895.
[13] Nov. Zool., vol. 2, no. 3, p. 476, Aug. 17, 1895.
[14] Nov. Zool., vol. 1, no. 2, p. 482, Apr. 16, 1894.

Geographic distribution.—Himalaya Mountains, from Kashmir to Sikkim, and (in winter) northern India.

2. *Spilornis cheela melanotis* (Jerdon).

Falco albidus Temminck, Nouveau recueil de planches coloriées d'oiseaux, vol. 1, livr. 4, texte to pl. 19, p. [1], Apr., 1822. ("l'Inde"; "Pondichery.") (Preoccupied by *Falco albidus* Gmelin, Systema naturae, vol. 1, pt. i, p. 267, July 25, 1788).

Buteo melanotis Jerdon, Madras Journ. Lit. and Sci., vol. 13, pt. 1, no. 30, p. 166, "April, 1844" [June–September, 1844]. ("Foot of the Neilgherries" [southern India]).

Geographic distribution.—Southern, central, and eastern India, north to Assam.

3. *Spilornis cheela spilogaster* (Blyth).

H[*æmatornis*]. *spilogaster* Blyth, Journ. Asiatic Soc. Bengal, vol. 21, new ser., no. 54, p. 351, 1852 (June or later). ("Ceylon.")

Geographic distribution.—Ceylon.

4. *Spilornis cheela burmanicus* Swann.

Spilornis cheela burmanicus Swann, A synoptical list of the Accipitres, pt. 3, p. 81, Jan. 20, 1920. ("Jobin, Thayetmyo, Burma.")

Geographic distribution.—Burma, north to central upper Burma and the Shan States; and south to central Tenasserim.

5. *Spilornis cheela ricketti* Sclater.

Spilornis cheela ricketti Sclater, Bull. Brit. Orn. Club, vol. 40, no. 245, p. 37, Dec. 8, 1919. ("Yamakan, Fokien Province, South China.")

Geographic distribution.—Southern China, south to northern Upper Burma (Chindwin district).

6. *Spilornis cheela floweri* Swann.

Spilornis cheela floweri Swann, A synoptical list of the Accipitres, pt. 3, p. 81, Jan. 20, 1920. ("Tahkaman and Chantaboon, Siam.")

Geographic distribution.—Siam.

7. *Spilornis cheela rutherfordi* Swinhoe.

Spilornis rutherfordi Swinhoe, Ibis, new [2d] ser., vol. 6, no. 21, p. 85, Jan., 1870. ("Shuy-wei-sze [Central Hainan] to Tai-ping-sze.")

Geographic distribution.—Hainan Island, to French Indo-China.

8. *Spilornis cheela hoya* Swinhoe.

Spilornis hoya Swinhoe, Ibis, new [2d] ser., vol. 2, no. 7, p. 304, July, 1866. ("Tamsuy" [Formosa].)

Geographic distribution.—Formosa Island, Japan.

9. *Spilornis cheela perplexus* Swann.

Spilornis cheela perplexus Swann, A synopsis of the Accipitres, pt. 3, p. 135, Feb. 16, 1922. ("Triomate, Yayeyema, S. Loo Choo Is.")

Geographic distribution.—Riu Kiu Islands, Japan.

10. *Spilornis cheela davisoni* Hume.

S[*pilornis*]. *Davisoni* Hume, Stray Feathers, vol. 1, nos. 2–4, p. 307, Feb., 1873 (in text). ("Andamans.")

Geographic distribution.—Andaman Islands.

11. *Spilornis cheela minimus* Hume.

Spilornis minimus Hume, Stray Feathers, vol. 1, no. 6, p. 464, Dec., 1873. ("Neighborhood of Camorta" [Nicobars]).

Geographic distribution.—Northern Nicobar Islands.

12. *Spilornis cheela malayensis* Swann.

Spilornis cheela malayensis Swann, A synoptical list of the Accipitres, pt. 3, p. 83, Jan. 20, 1920. ("Raub, Pahang.")

Geographic distribution.—Southern Tenasserim and the Malay Peninsula, including Peninsular Siam.

13. *Spilornis cheela bassus* (Forster).

Falco bassus Forster, *in* Le Vaillant's Naturgeschichte der afrikanischen Vögel, p. 55, pl. 15, 1798 (no other locality than Africa ("entlegensten Theils der grossen Namaquas und von da nach dem Wendezirkee des Steinbocks, der einzige mittägliche Theil von Afrika") is given, which is, of course, erroneous. It is the same as *Falco bacha* Daudin, the type locality for which has been fixed by W. L. Sclater, Bull. Brit. Orn. Club, vol. 40, no. 245, p. 39, December 8, 1919, as Sumatra. The type locality of *Falco bassus* is therefore best considered as Sumatra, which is as such hereby designated).

Falco bacha Daudin, Traité d'ornithologie élémentaire et complet, vol. 2, p. 43. 1800 (based on "Levaillant, Ois. d'Afr. pl. 15").

Geographic distribution.—Sumatra and some of its coastal islands, including the Batu Islands.

14. *Spilornis cheela salvadorii* Berlepsch.

Spilornis salvadorii Berlepsch, Nov. Zool., vol. 2, no. 2, p. 73, July 3, 1895. ("Nias.")

Geographic distribution.—Nias Island, Barussan Islands, western coast of Sumatra.

15. *Spilornis cheela pallidus* Walden.

Spilornis pallidus Walden, Ibis, 3d ser., vol. 2, no. 8, p. 363, Oct., 1872 (in text). ("Jambusan," "Northern Borneo.")

Spilornis checla richmondi Swann, A synopsis of the Accipitres, pt. 3, p. 135, Feb. 16, 1922. ("Kendawangan R[iver]., S. W. Borneo.")

Geographic distribution.—Borneo, except some of the highest mountains.

16. *Spilornis cheela kinabaluensis* Sclater.

Spilornis cheela kinabaluensis Sclater, Bull. Brit. Orn. Club, vol. 40, no. 245, p. 37, Dec. 8, 1919. ("Mt. Kinabalu, Borneo.")

Geographic distribution.—Mount Kinabalu and Mount Dulit, northern Borneo.

17. *Spilornis cheela palawanensis* Sclater.

Spilornis cheela palawanensis Sclater, Bull. Brit. Orn. Club, vol. 40, no. 245, p. 38, Dec. 8, 1919. ("Palawan.")

Geographic distribution.—Palawan and Balabac Islands, Philippine Islands.

18. *Spilornis cheela baweanus* Oberholser.

Spilornis bassus baweanus Oberholser, Proc. U. S. Nat. Mus., vol. 52, p. 185, Feb. 8, 1917. ("Bawean Island, Java Sea.")

Geographic distribution.—Bawean Island, Java Sea.

19. *Spilornis cheela bido* (Horsfield).

Falco Bido Horsfield, Trans. Linn. Soc. London, vol. 13, pt. 1, p. 137, May, 1821. ("Java.")

Geographic distribution.—Java.

*ACCIPITER VIRGATUS VIRGATUS (Temminck)

Falco virgatus Temminck, Nouveau recueil de planches coloriées d'oiseaux, vol. 1, livr. 19, texte to pl. 109, p. [1], Apr., 1822 (Reinwardt MS.). ("Java.")

This hawk was reported by Doctor Hartert [15] from specimens collected by A. Everett on both Bunguran Island and Sirhassen Island.

*LOPHOSPIZA TRIVIRGATA TRIVIRGATA (Temminck)

Falco trivirgatus Temminck, Nouveau recueil de planches coloriées d'oiseaux, vol. 1, livr. 51, texte to pl. 303, p. [1], Oct. 23, 1824. ("Sumatra.")

A specimen taken in July, 1894, on Bunguran Island, has been recorded by Doctor Hartert.[16]

The original spelling of the generic name is as given above,[17] although sometimes written *Lophospizia* or *Lophospizias*.

Family RALLIDAE

*AMAURORNIS PHOENICURA JAVANICA (Horsfield)

Gallinula Javanica Horsfield, Trans. Linn. Soc. London, vol. 13, pt. 1, p. 196, May, 1821. ("Java.")

This species, under the name *Erythra phoenicura*, was recorded by Doctor Hartert [18] from Sirhassen Island.

Family ARENARIIDAE

*ARENARIA INTERPRES OAHUENSIS (Bloxham)

Tringa Oahuensis Bloxham, *in* Byron's Voyage of H. M. S. *Blonde* to the Sandwich Islands, p. 251, 1826. ("Sandwich [i. e., Hawaiian] Islands.")

Recorded from Bunguran Island by Doctor Hartert [19] under the name *Strepsilas interpres*. The specimen has not been examined, but it probably belongs to the Pacific form of this species.

[15] Nov. Zool., vol. 1, no. 2, p. 482, Apr. 16, 1894.
[16] Nov. Zool., vol. 2, no. 3, p. 476, Aug. 17, 1895.
[17] *Lophospiza* Kaup, Classification der Säugetiere und Vögel, p. 118, 1844.
[18] Nov. Zool., vol. 1, no. 2, p. 483, Apr. 16, 1894.
[19] Nov. Zool., vol. 2, no. 3, p. 477, Aug. 17, 1895.

Family CHARADRIIDAE

*SQUATAROLA SQUATAROLA HYPOMELA (Pallas)

Charadrius hypomelus PALLAS, Reise durch verschiedene Provinzen des russischen Reichs, vol. 3, p. 699, 1776, after Feb. 21. ("paludes borealis orae.")

Under the name *Charadrius squatarola* Doctor Hartert records [20] what is apparently this subspecies from Bunguran Island.

PLUVIALIS DOMINICA FULVA (Gmelin)

[*Charadrius*] *fulvus* GMELIN, Systema naturae, vol. 1, pt. 2, p. 687, Apr. 20, 1789. ("Tahiti" [Society Islands]).

Three specimens are in Doctor Abbott's collection:

Adult male, U.S.N.M. No. 174656, Bunguran Island, July 3, 1900. Length in flesh, 248 mm. "Bill black; legs slaty; toes blackish."

Adult male, U.S.N.M. No. 174657, Bunguran Island, July 3, 1900. Length in flesh, 252 mm.

Adult female, U.S.N.M. No. 174658, Bunguran Island, July 3, 1900. Length in flesh, 254 mm. "Bill black, pale brown at gape; feet slaty, toes darker."

These three examples, together with one other not preserved, were shot from a flock of eight on the shore. All are in process of molt. The two males are in nearly complete winter plumage, with some of the contour feathers and some wing quills not yet fully grown; the female is just beginning to change from the breeding plumage, and still retains most of the black feathers of the lower parts.

The occurrence of these birds here on this date is of interest, since they must be either very early autumn migrants or individuals that for some reason had not gone northward at the usual time. If the latter, they would probably have remained all summer in the Natuna Islands.

Doctor Hartert has recorded [21] this form of the golden plover from Sirhassen Island, without date of capture.

*EUPODA VEREDA (Gould)

Charadrius veredus GOULD, Proc. Zool. Soc. London, vol. 16, p. 38, Nov. 14, 1848. ("Northern Australia.")

This species has been reported from Bunguran Island by Doctor Hartert.[22]

*PAGOA LESCHENAULTII (Lesson)

Charadrius leschenaultii LESSON, Dict. Sci. Nat., vol. 42, p. 36, 1826. (Pondichery, India.)

Ch[*aradrius*]. *Geoffroyi* WAGLER, Systema avium, Charadrius No. 19, p. 61, 1827. (Pondichery, India; and Java.)

Recorded from Bunguran Island by Doctor Hartert.[23]

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[20] Nov. Zool., vol. 1, no. 2, p. 483, Apr. 16, 1894.
[21] Nov. Zool., vol. 1, no. 2, p. 483, Apr. 16, 1894.
[22] Nov. Zool., vol. 2, no. 3, p. 477, Aug. 17, 1895.
[23] Nov. Zool., vol. 2, no. 3, p. 477, Aug. 17, 1895.

*CHARADRIUS MONGOLUS Pallas

Charadrius mongolus PALLAS, Reise durch verschiedene Provinzen russischen Reichs, vol. 3, p. 700, 1776, after Feb. 21. ("circa lacus salsos versus mongoliae fines.")

Doctor Hartert has recorded [24] this plover from Bunguran Island, Pulo Laut, and Pulo Pandak.

*LEUCOPOLIUS ALEXANDRINUS ALEXANDRINUS (Linnaeus)

[*Charadrius*] *alexandrinus* LINNAEUS, Systema naturae, ed. 10, vol. 1, p. 150, Jan. 1, 1758. ("Ægypti ex Nilo canalem.")

Recorded by Doctor Hartert [25] from Bunguran Island, as *Aegialitis cantianus*.

Family SCOLOPACIDAE

*PHAEOPUS PHAEOPUS VARIEGATUS (Scopoli)

Tantalus variegatus SCOPOLI, Deliciae florae et faunae Insubricae, pt. 2, p. 92, 1786. (No locality.)

Doctor Hartert has recorded [26] this subspecies from Bunguran Island.

*LIMOSA LAPPONICA BAUERI Naumann

Limosa Baueri NAUMANN, Naturgeschichte der Vögel Deutschlands, vol. 8, p. 429 (in text), 1836. (Neuholland.)

Recorded by Doctor Hartert [27] from Bunguran Island.

*ACTITIS HYPOLEUCA (Linnaeus)

[*Tringa*] *Hypoleucos* LINNAEUS, Systema naturae, ed. 10, vol. 1, p. 149, Jan. 1, 1758. ("Europa" [type locality, Sweden].)

Doctor Hartert records this species [28] from Bunguran "and other islands."

*RHYACOPHILUS GLAREOLA (Linnaeus)

[*Tringa*] *Glareola* LINNAEUS, Systema naturae, ed. 10, vol. 1, p. 149, Jan. 1, 1758. ("Europa" [type locality, Sweden].)

Recorded by Doctor Hartert [29] from Bunguran Island.

*PISOBIA RUFICOLLIS (Pallas)

Tryngа ruficollis PALLAS, Reise durch verschiedene Provinzen russischen Reichs, vol. 3, p. 700, 1776, after Feb. 21. ("Circa Lacus salsos Dauuriae campestris.")

This species has been recorded by Doctor Hartert [30] from Bunguran Island and Pulo Pandak.

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[24] Nov. Zool., vol. 2, no. 3, p. 477, Aug. 17, 1895.
[25] Nov. Zool., vol. 2, no. 3, p. 477, Aug. 17, 1895.
[26] Nov. Zool., vol. 2, no. 3, p. 478, Aug. 17, 1895.
[27] Nov. Zool., vol. 2, no. 3, p. 478, Aug. 17, 1895.
[28] Nov. Zool., vol. 2, no. 3, p. 478, Aug. 17, 1895.
[29] Nov. Zool., vol. 2, no. 3, p. 478, Aug. 17, 1895.
[30] Nov. Zool., vol. 2, no. 3, p. 478, Aug. 17, 1985.

Family STERNIDAE

THALASSEUS BERGII PELECANOIDES (King)

Sterna pelecanoides King, Narrative of a survey of the intertropical and western coasts of Australia, vol. 2, p. 422, 1827. ("Australia" [i. e., Torres Strait, northern Queensland].)

Two specimens, from Pulo Laut. Both these are nearly adult, and are molting some of their contour feathers. In color they are identical with birds from the Anamba Islands, but are rather larger.[31] They were shot out of a flock of 200 or 300 sitting on a sandbank. They measure as follows:

Table 2.—*Measurements of specimens of* Thalasseus bergii pelecanoides

U.S.N.M. No.	Sex	Locality	Date	Total length[1]	Wing	Tail	Exposed culmen	Tarsus
			1900	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174652	♀	Pulo Laut	Aug. 3	477	355	139	64	28
174653	♀	do	do	445	338	132	55.5	27

[1] Measured in the flesh by the collector.

Doctor Hartert states in his account of the second Natuna collection examined by him that the present species was "common on all the islands,"[32] by which statement we assume him to mean Bunguran Island, Pulo Laut, Pulo Pandak, and Pulo Panjang.

*STERNA SUMATRANA SUMATRANA Raffles

Sterna Sumatrana Raffles, Trans. Linn. Soc. London, vol. 13, pt. 2, p. 329, Nov. or Dec., 1822. (Sumatra.)

This species, doubtless the present subspecies, has been recorded by Doctor Hartert[33] from Bunguran Island and Pulo Pandak, under the name *Sterna melanauchen.*

*STERNULA ALBIFRONS SINENSIS (Gmelin)

[*Sterna*] *sinensis* Gmelin, Systema naturae, vol. 1, p. 608, pt. 2, Apr. 20, 1789. ("Sina.")

Recorded from Pulo Laut by Doctor Hartert.[34]

[31] For a synopsis of the races of *Thalasseus bergii*, and the reasons for the employment of the above-given name, see Oberholser, Proc. U. S. Nat. Mus., vol. 49, pp. 515-526, Dec. 23, 1915.

[32] Nov. Zool., vol. 2, no. 3, p. 478, Aug. 17, 1895.

[33] Nov. Zool., vol. 2, no. 3, p. 478, Aug. 17, 1895.

[34] Nov. Zool., vol. 2, no. 3, p. 478, Aug. 17, 1895.

Family CLARAVIIDAE

CHALCOPHAPS INDICA INDICA (Linnaeus)

[*Columba*] *indica* LINNAEUS, Systema naturae, ed. 10, vol. 1, p. 164, Jan. 1, 1758. ("in India orientali.")

One individual was caught by Doctor Abbott in a rat trap on Sirhassen Island early in June, 1900, but was so badly damaged that it was not preserved. The species has apparently not previously been recorded from the Natuna Islands.

*GEOPELIA STRIATA STRIATA (Linnaeus)

[*Columba*] *striata* LINNAEUS, Systema naturae, ed. 12, vol. 1, p. 282, 1766, after May 24. ("India orientali.")

Recorded by Doctor Hartert [35] from Sirhassen Island.

Family TRERONIDAE

MUSCADIVORES AENEUS DIATROPURUS, new subspecies

Subspecific characters.—Resembling *Muscadivores aeneus polius* Oberholser [36] of the Anamba Islands, but with lower parts more vinaceous (less purely grayish); tail averaging more greenish (less bluish); and upper parts averaging more bronzy (less greenish).

Description.—Type, adult male, U.S.N.M. No. 174666; Pulo Midei, Natuna Islands, May 23, 1900; Dr. W. L. Abbott. Anterior edge of forehead cream-white (artificially stained to cream-buff), rest of forehead, with the crown and occiput between light vinaceous-fawn and pale vinaceous-fawn, overlaid by pale mouse gray, this deepening on center of occiput to pale neutral gray; upper cervix pale vinaceous-drab overlaid and mixed with pale neutral gray; lower cervix neutral gray; interscapular region metallic reddish bronze over a background of dark metallic green; rest of upper surface mixed metallic nickel green, other dark greens, and reddish bronze; tail brownish black, the inner webs of the feathers clove brown tinged with metallic dusky dull green, dull bluish green, and dusky yellowish green, the middle feathers metallic nickel green on their inner webs, changing to dark, dull yellowish green on their outer webs; wings dull brownish slate, more brownish on the inner edges of the inner webs of the quills, the outer edges of the primaries slate gray, but terminally with a slightly greenish gloss, the outer webs of secondaries varying from dark Russian green to dark blue gray green; tertials and greater coverts of the same colors, but much tinged with reddish bronze; sides of head light grayish vinaceous; orbital ring cream-white; chin cream-white (artifically stained to

[35] Nov. Zool., vol. 1, no. 2, p. 482, Apr. 16, 1894. [36] U. S. Nat Mus. Bull. 98, p. 18, June 30, 1917.

cream-buff); throat pale ecru-drab; jugulum and sides of neck between pale neutral gray and pallid neutral gray, underlaid with light vinaceous-fawn; breast and abdomen pallid Quaker drab overlying light vinaceous-drab; sides and flanks pale neutral gray; lower tail coverts between carob brown and liver brown; thighs dull white, washed with pallid neutral gray; lining of wing ranging from neutral gray to pale neutral gray, distally rather brownish; under surface of wing quills rather light slaty fuscous; "iris deep red."

Like most of the races of *Muscadivores aeneus*, this needs comparison of more than individual specimens to bring out its characteristics. It seems, however, to be separable from the surrounding forms. It may be distinguished from *Muscadivores aeneus aeneus*, of Borneo, by its more greenish (less bluish) tail; usually somewhat darker nape; and usually more bronzy upper parts.

From *Muscadivores aeneus chalyburus*, of the Philippine Islands, it is readily separable by its darker gray cervix, less sharply defined from the back, and by brighter (less grayish) and usually more bluish tail. As a matter of fact it is really more nearly like *Muscadivores aeneus arhadius* Oberholser [37] from Sumatra, but from which it is characterizable by its darker pileum and cervix and more vinaceous (less purely gray) lower parts.

As is usual in this pigeon, there is in this race some individual difference in the greenish or bluish metallic sheen of the tail, but otherwise in colors the adult specimens we have examined are very much alike.

While there is in *Muscadivores aeneus* practically no color difference between the sexes, the bird in first autumn plumage differs from the adult in lacking all trace of vinaceous on head, cervix, throat, and breast, these parts being plain gray, darker and duller on throat and breast than in the adult.

The remaining lower parts also are duller and lack nearly or quite all vinaceous; while the back, rump, wings, and tail are somewhat duller, the back and wings being obscured to some extent with glaucous. Just how long this immature plumage is worn we are not sure, but probably until the bird is a year old, possibly longer.

Four specimens were sent by Doctor Abbott:

Adult male (type), U.S.N.M. No. 174666, Pulo Midei, May 23, 1900. "Iris deep red."

Adult male, U.S.N.M. No. 174667, Pulo Midei, May 25, 1900. "Bill leaden; cere livid purple; feet dark reddish purple (livid)."

Adult male, U.S.N.M. No. 174668, Sirhassen Island, June 1, 1900.

First autumn female, U.S.N.M. No. 174665, Bunguran Island, July 14, 1900.

[37] Journ. Washington Acad. Sci., vol. 14, no. 13, p. 296, July 19, 1924.

Beginnings of molt are to be noticed among the contour feathers of No. 174666, taken on May 23, and No. 174667, taken on May 25, and also among the wing quills of the latter; but no such indication was found on either of the two remaining specimens. The female, No. 174665, collected on July 14, which we take to be in first autumn plumage, has apparently completed the molt.

Doctor Hartert has recorded specimens of this pigeon from Pulo Laut.[38]

Measurements of the specimens collected by Doctor Abbott are given in Table 3:

TABLE 3.—*Measurements of specimens of* Muscadivores aeneus diatropurus

U. S. N. M. No.	Sex	Locality	Date	Collector	Total length[1]	Wing	Tail	Exposed culmen	Tarsus
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm*
174668	♂	Sirhassen Island	June 1	W. L. Abbott	419	229	151	24	30
174666	♂	Pulo Midei[2]	May 23	do	419	227	136	24.5	34
174667	♂	do	May 25	do	438	244	148	25.5	31.5
Average of 3 males					425.3	233.3	145	24.7	31.8
174665	♀	Bunguran Island	July 14	W. L. Abbott		216	133	24.5	29.5

[1] Measured in the flesh by the collector.
[2] Type.

The following 11 subspecies of *Muscadivores aeneus* seem to be recognizable:

1. *Muscadivores aeneus aeneus* (Linnaeus).

[*Columba*] *aenea* LINNAEUS, Systema naturae, ed. 12, p. 283, 1766, after May 24. ("in Moluccis": since the species does not occur in the Molucca Islands, this locality, taken from Brisson, Ornithologia, vol. 1, pp. 148, 149, 1760, is erroneous. We therefore now designate Borneo as the type locality.)

Columba Moluccensis MÜLLER, Vollständigen Natursytems, Supplements-und Register-Band, p. 133, after January 4, 1776. ("moluckischen Inseln"; errore, we designate Borneo as the type locality.)

Geographic distribution.—Borneo and Java, east to the island of Flores; also southern Malay Peninsula (Pahang) to Bintang Island.

2. *Muscadivores aeneus palawanensis* (W. Blasius).

Carpophaga aenea (LINN.) nov. var. *palawanensis* W. BLASIUS, Ornis, vol. 4, no. 2, p. 316, Apr., 1888. ("Palawan.")

Geographic distribution.—Palawan Island and Sulu Island, Philippine Islands, to Banguey Island, British North Borneo.

3. *Muscadivores aeneus chalyburus* (Bonaparte).

C[*arpophaga*]. *Chalybura* BONAPARTE, Conspectus generum avium, vol. 2, p. 32, Nov. 8, 1854. ("Ins. Philipp."; we designate Manila, Luzon Island, as the type locality.)

[38] Nov. Zool., vol. 2, no. 3, p. 477, Aug. 17, 1895.

Geographic distribution.—Philippine Islands south to the islands of Mindanao and Basilan.

4. *Muscadivores aeneus diatropurus* Oberholser.

Muscadivores aeneus diatropurus Oberholser, antea, p. 25.

Geographic distribution.—Natuna Islands.

5. *Muscadivores aeneus polius* Oberholser.

Muscadivores aeneus polius Oberholser, U. S. Nat. Mus. Bull. 98, p. 18, June 30, 1917. ("Pulo Siantan, Anamba Islands.")

Geographic distribution.—Anamba Islands and Tambelan Islands, South China Sea.

6. *Muscadivores aeneus sylvaticus* (Tickell).

Columba Sylvatica Tickell, Journ. Asiatic Soc. Bengal, vol. 2, no. 23, p. 581, Nov., 1833. ("Borabhúm and Dholbhúm.")

C[arpophaga]. pusilla Blyth, Journ. Asiatic Soc. Bengal, vol. 18, no. 206, p. 816, for Aug., 1849. ("Nilgiris.")

Geographic distribution.—India north to Sikkim and Darjiling; west to Bombay; south to Ceylon, the Andaman Islands, Butang Island, and Peninsular Siam on the Malay Peninsula; and east to Siam, Cochin China, and the island of Hainan.

7. *Muscadivores aeneus arhadius* Oberholser.

Muscadivores aeneus arhadius Oberholser, Journ. Washington Acad. Sci., vol. 14, no. 13, p. 296, July 19, 1924. ("Kateman River, eastern Sumatra.")

Geographic distribution.—Sumatra, with the islands along its northeastern coast, to Billiton Island and the island of Banka.

8. *Muscadivores aeneus mistus* Oberholser.

Muscadivores aeneus mistus Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 2, Oct. 26, 1912. ("Simalur Island.")

Geographic distribution.—Simalur Island, Barussan Islands, western Sumatra.

9. *Muscadivores aeneus babiensis* Richmond.

Muscadivores consobrina babiensis Richmond, Proc. Biol. Soc. Washington, vol. 25, p. 103, June 15, 1922. ("Pulo Babi, northwest coast of Sumatra.")

Geographic distribution.—Pulo Babi and Pulo Lasia, Barussan Islands, western Sumatra.

10. *Muscadivores aeneus consobrina* (Salvadori).

Carpophaga consobrina Salvadori, Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, vol. 4, p. 558, May 20, 1887. ("G. Sitoli" [Nias Island].)

Geographic distribution.—Island of Nias and Banjak Islands, Barussan Chain, western Sumatra.

11. *Muscadivores aeneus vicinus* Riley.

Muscadivores aeneus vicinus Riley, Proc. Biol. Soc. Washington, vol. 40, p. 95, June 30, 1927. ("Sipora Island, Mentawi Islands.")

Geographic distribution.—Batu Islands, Mentawi Islands, and Pagi Islands, Barussan Chain, western Sumatra.

MYRISTICIVORA BICOLOR (Scopoli)

Columba bicolor Scopoli, Deliciae florae et faunae Insubricae, vol. 2, p. 94, 1786. ("Nova Guiana.")

Five specimens were collected by Doctor Abbott, as follows:

Adult male, U.S.N.M. No. 174662, Pulo Laut, August 6, 1900. Length in flesh, 406 mm. "Feet blue; claws black; eyelids blue; bill blue, tip black."

Adult male, U.S.N.M. No. 174661, Pulo Laut, August 5, 1900. Length in flesh, 400 mm.

Adult male, U.S.N.M. No. 174664, Pulo Seraia, May 29, 1900.

Adult female, U.S.N.M. No. 174660, Sirhassen Island, June 10, 1900. "Iris dark brown; feet leaden blue; claws black; bill leaden blue, black at tip."

Adult female, U.S.N.M. No. 174659, Sirhassen Island, June 10, 1900. Length in flesh, 387 mm. "Contained well-developed eggs."

TABLE 4.—*Measurements of specimens of* Myristicivora bicolor

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174664	♂	Pulo Seraia	May 29	W. L. Abbott	-----	222	120	23.5	7	27	34
174661	♂	Pulo Laut	Aug. 5	do	400	225	130	24.5	8.5	29.5	37.5
174662	♂	do	Aug. 6	do	406	232	129.5	25.5	9	28.5	36
174659	♀	Sirhassen Island	June 10	do	387	220	117	22.5	8	33	33
174660	♀	do	do	do	-----	226	123	23.5	8	35.5	35.5

[1] Measured in the flesh by the collector.

These examples appear to be identical with birds from other parts of the range of the species. The lack or very small amount of tangible geographic variation in this pigeon is rather unusual among the species of the family in the East Indies. There is likewise but little individual variation, such as exists being chiefly in the amount of black on the tail and on the tips of the lower tail coverts.

Doctor Abbott notes that this species was numerous on Pulo Seraia at the time of his visit, May 29, 1900. He also reported it common on Pulo Laut, August 6, 1900, where it frequented the coconut trees. A female taken on June 10, containing well-developed eggs, indicates that the breeding season is probably in June.

Doctor Hartert has recorded[39] this species from the additional islands of Bunguran, Pulo Pandak, and Pulo Panjang.

Measurements of the specimens obtained by Doctor Abbott are given in Table 4.

[39] Nov. Zool., vol. 2, no. 3, p. 477, Aug. 17, 1895.

*TRERON CURVIROSTRA NASICA Schlegel

Treron nasica Schlegel, Nederlandsch Tijdschrift Dierkunde, vol. 1, p. 67, 1863. ("district de Bandjermassing dans le Bornéo méridional"; "côte sud-ouest de Sumatra").

This species has been recorded from Bunguran Island by Doctor Hartert,[40] under the name *Treron nipalensis*.

*DENDROPHASSA FULVICOLLIS FULVICOLLIS (Wagler)

C[*olumba*]. *fulvicollis* Wagler, Systema avium, Columba species 8, p. 229, 1827. ("Insulis Philippinis.")

This species was recorded by Doctor Hartert[41] from specimens obtained on Sirhassen Island.

*DENDROPHASSA OLAX OLAX (Temminck)

Columba olax Temminck, Nouveau recueil de planches coloriées d'oiseaux, vol. 4, livr. 41, texte to pl. 241, p. [1], Dec. 27, 1823. ("Sumatra.")

A specimen taken on Mount Ranay, Bunguran Island, has been recorded by Doctor Hartert.[42]

DENDROPHASSA VERNANS PELLOCHLORA, new subspecies

Subspecific characters.—Similar to *Dendrophassa*[43] *vernans vernans*, from the Philippine Islands, but much larger; male somewhat darker, duller, less greenish (more slaty), on back and wings, and with posterior lower parts duller, less yellow; female also darker, duller above, duller, less yellowish (more grayish) below, with the under tail coverts darker.

Description.—Type, adult female, U.S.N.M. No. 174674, Sirhassen Island, Natuna Islands, June 8, 1900; Dr. W. L. Abbott. Forehead mignonette green; remaining upper surface (except the upper tail coverts) Krönberg's green, somewhat washed with plumbeous on crown, cervix, and rump, and shading on the last into the light brownish olive of the upper tail coverts; tail slate-gray, the two middle rectrices slightly shaded with brownish olive basally and all crossed by a subterminal band of black, some 25 mm. wide on outermost pair, but only 8 mm. on the middle feathers; primaries, secondaries, outermost greater wing coverts, and primary coverts, black, slightly brownish, the inner webs of the quills shading to neutral gray basally, the primaries edged very narrowly on terminal portion of outer webs with yellowish or buffy white, the inner secondaries in a similar manner but more broadly with picric yellow or pale lemon yellow;

[40] Nov. Zool., vol. 2, no. 3, p. 477, Aug. 17, 1895.

[41] Nov. Zool., vol. 1, no. 2, p. 482, Apr. 16, 1894.

[42] Nov. Zool., vol. 2, no. 3, p. 476, Aug. 17, 1895.

[43] For the change of the generic name *Osmotreron* Bonaparte to *Dendrophassa* Gloger, see Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 2, Oct. 26, 1912.

longest tertial black like the primaries, but its exterior web dull, dark, olive-green, broadly margined with pale lemon yellow; other tertials, lesser, median, and innermost greater wing coverts, olive-green, the inner greater coverts with subterminal portion black, and broad oblique tips pale lemon yellow, the median coverts similarly tipped; sides of head warbler green; sides of neck and of breast like the cervix; chin oil yellow; throat and jugulum warbler green; breast oil yellow; middle of abdomen amber yellow; sides slate gray overlaid by warbler green; flanks and thighs ivy green streaked with amber yellow and pale lemon yellow; lower tail coverts basally, and the longest feathers also medially, neutral gray, succeeded by russet, and tipped and edged with cinnamon, pale dull cinnamon, and light ochraceous-buff; lining of wing slate gray, the edge of the wing washed with olive-green.

Five specimens were obtained by Doctor Abbott, as follows:

Adult male, U.S.N.M. No. 174673, Bunguran Island, July 28, 1900. "Bill leaden blue; cere greenish yellow; feet reddish purple; iris in two rings, inner blue, outer pink." Length in flesh, 298 mm.

Adult male, U.S.N.M. No. 174671, Pulo Laut, August 7, 1900. Length in flesh, 318 mm.

Adult male, U.S.N.M. No. 174670, Pulo Laut, August 13, 1900. Length in flesh, 292 mm.

Adult female (type), U.S.N.M. No. 174674, Sirhassen Island, June 8, 1900. Length in flesh, 267 mm.

Adult female, U.S.N.M. No. 174672, Bunguran Island, June 22, 1900. "Bill leaden; cere green; feet purplish red; iris in two circles, inner blue, outer pink." Length in flesh, 279 mm.

All these specimens show evidences of molt in both quills and contour feathers. A female has been chosen as the type of this new race, because she exhibits better than the male the differences from the most nearly related forms. The type is somewhat darker than the other female in Doctor Abbott's collection, owing to her almost wholly freshly molted plumage. The three males are very uniform in color.

Measurements are given in Table 5.

This Natuna Islands race is related perhaps most closely to *Dendrophassa vernans adina* [44] from the Anamba Islands, and the males of the two are difficult to distinguish; the female of the Natuna form, however, besides being slightly more greenish above, is decidedly more yellowish below, where also darker, less whitish posteriorly, and on the under tail coverts darker.

Doctor Abbott reports this bird fairly common on Sirhassen Island.

[44] Oberholser, U. S. Nat. Mus. Bull. 98, p. 20, June 30, 1917.

TABLE 5.—*Measurements of specimens of* Dendrophassa vernans pellochlora

U. S. N. M. No.	Sex	Locality	Date	Collector	Total length[1]	Wing	Tail	Exposed culmen	Tarsus
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174671	♂	Pulo Laut	Aug. 7	W. L. Abbott	318	163	99	18	25.5
174670	♂	do	Aug. 13	do	292	164	94	16.5	26
174673	♂	Bunguran Island	July 28	do	298	162	96.5	17.5	24
Average of 3 males					302.7	163	96.5	17.3	25.2
176674	♀	Sirhassen Island[2]	June 8	W. L. Abbott	267	150	89	------	22.5
174672	♀	Bunguran Island	June 22	do	279	150	90	16	22.5
Average of 2 females					273	150	89.5	16	22.5

[1] Measured in the flesh by the collector.
[2] Type.

There seem to be 11 geographic races of *Dendrophassa vernans*, the names and distribution of which are as follows:

1. *Dendrophassa vernans vernans* (Linnaeus).

Columba vernans LINNAEUS, Mantissa plantarum altera, p. 526, 1771. ("in Philippinis" [type locality, Luzon].)

Treron vernalis PELZELN, Reise der Österreichischen Fregatte Novara um die Erde, Zoologischer Theil, vol. 1, no. 2, Vögel, p. 176 (index), 1869. (Err. pro *Treron vernans* "Gmel. nec. Temm.")

Geographic distribution.—Northern part of Philippine Islands.

2. *Dendrophassa vernans neophasma* Oberholser.

Dendrophassa vernans neophasma OBERHOLSER, Journ. Washington Acad. Sci., vol. 14, no. 13, p. 297, July 19, 1924. ("Cottabata, Mindanao Island, Philippine Islands.")

Geographic distribution.—Southern Philippine Islands, at least the islands of Mindanao, Basilan, Jolo, and Sulu.

3. *Dendrophassa vernans zalepta* Oberholser.

Dendrophassa vernans zalepta OBERHOLSER, Journ. Washington Acad. Sci., vol. 14, no. 13, p. 298, July 19, 1924. ("Kwala Besar, Celebes.")

Geographic distribution.—Celebes.

4. *Dendrophassa vernans purpurea* (Gmelin).

[*Columba*] *purpurea* GMELIN, Systema naturae, vol. 1, pt. 2, p. 784, Apr. 20, 1789. ("Java.")

Treron chlorops SALVADORI, Ann. Mus. Civ. Stor. Nat. Genova, vol. 5, p. 288 (in text), Aug., 1874. ("Celebes e di Giava"; we now designate Java as the type locality.)

Geographic distribution.—Java, east to Sumbawa Island and north to Borneo.

5. *Dendrophassa vernans griseicapilla* (Schlegel).

[*Treron*] *griseicapilla* SCHLEGEL, Nederlandsch Tijdschrift Dierkunde, vol. 1, p. 71 (in text), 1863. ("Sumatra e de Bangka"; we designate Sumatra as the type locality.)

Geographic distribution.—Sumatra, and the islands of Banka and Billiton.

6. *Dendrophassa vernans mesochlora* Oberholser.

Dendrophassa vernans mesochlora Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 2, Oct. 26, 1912. ("Nias Island.")

Geographic distribution.—Nias Island, Batu Islands, Mentawi Islands, and Engano Island, Barussan Chain, western Sumatra.

7. *Dendrophassa vernans polioptila* Oberholser.

Dendrophassa vernans polioptila Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 3, Oct. 26, 1912. ("North Pagi Island.")

Geographic distribution.—Pagi Islands, Barussan Chain, western Sumatra.

8. *Dendrophassa vernans miza* Oberholser.

Dendrophassa vernans miza Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 3, Oct. 26, 1912. ("Simalur Island.")

Geographic distribution.—Simalur Island, Barussan Islands, western Sumatra.

9. *Dendrophassa vernans abbotti* Oberholser.

Dendrophassa vernans abbotti Oberholser, Journ. Washington Acad. Sci., vol. 14, no. 13, p. 298, July 19, 1924. ("Tyching, Trang, Lower Siam" [Malay Peninsula].)

Geographic distribution.—Cochin China, Siam, the Malay Peninsula, and south to Singapore.

10. *Dendrophassa vernans adina* Oberholser.

Dendrophassa vernans adina Oberholser, U. S. Nat. Mus. Bull. 98, p. 20, June 30, 1917. ("Pulo Mata, Anamba Islands.")

Geographic distribution.—Anamba Islands, South China Sea.

11. *Dendrophassa vernans pellochlora* Oberholser.

Dendrophassa vernans pellochlora Oberholser, antea, p. 30.

Geographic distribution.—Natuna Islands.

Family CUCULIDAE

*RHAMPHOCOCCYX BORNEENSIS Blasius and Nehrkorn

[*Rhamphococcyx erythrognathus*] var. *bornecnsis* Blasius and Nehrkorn, Jahresbericht Verein für Naturwissenschaft zu Braunschweig, for 1880–1881, p. 125 (in text), after March, 1881. ("Jambusan, Sarawak, Borneo.")

Doctor Hartert has recorded [45] this species from Bunguran Island, under the name *Phoenicophaes microrhinus*.[46] The different shape of the nostrils in this bird indicates that it is a distinct species, instead of a subspecies of *Urococcyx erythrognathus*.

[45] Nov. Zool., vol. 2, no. 3, p. 475, Aug. 17, 1895.

[46] For change of specific name, see Parrot, Verh. Orn. Ges. in Bayern, vol. 8, p. 132, Nov. 14, 1908.

*RHOPODYTES SUMATRANUS (Raffles)

Cuculus Sumatranus RAFFLES, Trans. Linn. Soc. London, vol. 13, pt. 2, p. 287, Nov. or Dec., 1822. ("Sumatra and the adjacent islands.")

Specimens of this species collected in 1894 at Sinubing and at 1,000 feet altitude on Mount Ranay, Bunguran Island, were recorded by Doctor Hartert.[47]

ZANCLOSTOMUS JAVANICUS (Horsfield)

Phoenicophaus Javanicus HORSFIELD, Trans. Linn. Soc. London, vol. 13, pt. 1, p. 178, May, 1821. ("Java.")

One adult male, U.S.N.M. No. 174681, from Bunguran Island, June 27, 1900. Length in flesh, 432 mm. "Iris brownish red; bill red; feet leaden; orbital skin dull blue." It is in process of molting both wing quills and contour feathers.

*CENTROPUS SINENSIS BUBUTUS Horsfield

Centropus Bubutus HORSFIELD, Trans. Linn. Soc. London, vol. 13, pt. 1, p. 180, May, 1821. ("Java.")

This species has been reported from Bunguran Island by Doctor Hartert [48] under the name *Centropus sinensis*, on the basis of one specimen collected there in 1894.

*CENTROPUS BENGALENSIS JAVANENSIS Dumont

Centropus javanensis DUMONT, Dictionnaire des sciences naturelles, vol. 11, p. 144 (in text), 1818. ("Java.")

Doctor Hartert has recorded [49] this species from Bunguran Island, under the name *Centropus javanicus*.

*EUDYNAMIS SCOLOPACEA MALAYANA Cabanis and Heine

E[udynamis]. malayana CABANIS and HEINE, Museum Heineanum, vol. 4, Heft 1, p. 52, early in 1864. ("Sumatra.")

Doctor Hartert reported [50] the capture of this species on Sirhassen Island in 1893, and on Pulo Laut in 1894,[51] under the name *Eudynamis honorata*. We have examined no specimens from the Natuna Islands, but the birds from these islands belong probably to the Sumatra race.

*CHALCOCOCCYX XANTHORHYNCHUS MALAYANUS (Raffles)

Cuculus Malayanus RAFFLES, Trans. Linn. Soc. London, vol. 13, pt. 2, p. 286, Nov. or Dec., 1822. ("Malay Peninsula.")

Recorded from Bunguran Island by Doctor Hartert,[52] under the name *Chalcococcyx xanthorhynchus*, on the basis of specimens taken in June and August, 1894.

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[47] Nov. Zool., vol. 2, no. 3, p. 475, Aug. 17, 1895.
[48] Nov. Zool., vol. 2, no. 3, p. 475, Aug. 17, 1895.
[49] Nov. Zool., vol. 2, no. 3, p. 475, Aug. 17, 1895.
[50] Nov. Zool., vol. 1, no. 2, p. 481, Apr. 16, 1894.
[51] Nov. Zool., vol. 2, no. 3, p. 475, Aug. 17, 1895.
[52] Nov. Zool., vol. 2, no. 3, p. 475, Aug. 17, 1895.

It is possible that the Natuna Islands birds belong to the race from Banguey Island, British North Borneo, recently described by Chasen and Kloss,[53] but we have no specimens for comparison.

*SURNICULUS LUGUBRIS BRACHYURUS Stresemann

Surniculus lugubris brachyurus STRESEMANN, Nov. Zool., vol. 20, no. 2, p. 340, June 17, 1913. ("Bentong, Pahang.")

This species was recorded from Bunguran Island by Doctor Hartert.[54]

Family PSITTACIDAE

PSITTACULA LONGICAUDA (Boddaert)

Psittacus longicauda BODDAERT, Table des planches enluminéez d'histoire naturelle de M. d'Aubenton, p. 53, Dec., 1783. (Based on *"Perruche de Malac"* d'Aubenton, Planch. Enlum. d'Hist. Nat., pl. 887; type locality, Malacca.)

Four specimens are in Doctor Abbott's collection:

Adult male, U.S.N.M. No. 174677, Bunguran Island, June 29, 1900. Length in flesh, 400 mm. "Feet green; iris green, pale yellow externally."

Adult male, U.S.N.M. No. 174680, Sirhassen Island, June 8, 1900. Length in flesh, 419 mm." Upper mandible red; lower mandible black; feet pale greenish leaden; cere green."

Adult male, U.S.N.M. No. 174678, Pulo Subi, June 13, 1900. Length in flesh, 419 mm. "Upper mandible red, white at tip; lower mandible horn brown; feet dull greenish; cere green; orbital skin dull green."

Adult female, U.S.N.M. No. 174679, Pulo Subi, June 13, 1900. Length in flesh, 286 mm. Bill dull horn brown; feet greenish; cere dull brownish; iris in two circles, the inner pale green, the outer yellowish white."

All these except the male from Bunguran Island are in process of molting some of the wing quills. The male from Sirhassen Island is decidedly more bluish both above and below than the others, but this is hardly more than an individual peculiarity. Taken together these Natuna Islands birds do not appear to differ in any important respect from representatives of the same species from Borneo and others of the East India Islands.

Measurements are given in Table 6.

This parrot has been recorded by Doctor Hartert [55] from Pulo Laut, as well as from Bunguran Island.

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[53] *Chalcites (Chalcococcyx) xanthorhynchus bangueyensis* Chasen and Kloss, Journ. f. Orn., Ergänzungsband 2, p. 109, Oct. 29, 1929. ("Banguey Island.")

[54] Nov. Zool., vol. 1, no. 2, p. 481, Apr. 16, 1894.

[55] Nov. Zool., vol. 2, no. 3, p. 474, Aug. 17, 1895.

TABLE 6.—*Measurements of specimens of* Psittacula longicauda

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174680	♂	Sirhassen Island	June 8	W. L. Abbott	419	160. 5	234	25	23. 5	16	21. 5
174678	♂	Pulo Subi	June 13	do	419	160. 5	236	23. 5	21	16	21
174677	♂	Bunguran Island	June 29	do	400	148. 5	226	22	21. 5	15. 5	20. 5
174679	♀	Pulo Subi	June 13	do	286	149	102. 5	23	22. 5	15	21

[1] Measured in the flesh by the collector.

Family CORACIIDAE

*EURYSTOMUS ORIENTALIS CALONYX Sharpe

Eurystomus calonyx SHARPE, Proc. Zool. Soc. London, for 1890, p. 551, Oct. 1, 1890 (Hodgson MS.). ("Himalayan Terai from Kumaon to Darjiling and Upper Assam"; type from "Nepal," *fide* Sharpe, Catalogue of birds in the British Museum, vol. 17, p. 38, 1892.)

This form was recorded from Bunguran Island by Doctor Hartert.[56]

Family ALCEDINIDAE

*HALCYON PILEATA (Boddaert)

Alcedo pileata BODDAERT, Table des planches enlumineéz d'histoire naturelle de M. d'Aubenton, p. 41, Dec., 1783. (Based on *Martin-pêcheur de la Chine*, d'Aubenton, Planches Enlum., No. 673; type locality, China; further restricted to Canton, China, by Baker, Journ. Bombay Nat. Hist. Soc., vol. 28, no. 2, p.317, Mar. 25, 1922.)

This bird is reported by Doctor Hartert [57] from Bunguran Island, on the basis of a specimen taken.

SAUROPATIS CHLORIS CYANESCENS Oberholser

Sauropatis chloris cyanescens OBERHOLSER, Proc. U. S. Nat. Mus., vol. 52, p. 189, Feb. 8, 1917. ("Pulo Taya off the southeastern coast of Sumatra.")

Three specimens were collected by Doctor Abbott:

Adult female, U.S.N.M. No. 174697, Sirhassen Island, June 10, 1900. Length in flesh, 260.5 mm.

Adult female, U.S.N.M. No. 174698, Pulo Subi (north islet), June 12, 1900, Length in flesh, 248 mm.

Adult female, U.S.N.M. No. 174696, Bunguran Island, July 7, 1900. Length in flesh, 266.5 mm. "Stomach filled with small crabs."

In one of these, taken on June 10, 1900, on Sirhassen Island, the black nuchal band is all but obliterated by greenish, though the auriculars

[56] Nov. Zool., vol. 1, no. 2, p. 481, Apr. 16, 1894.
[57] Nov. Zool., vol. 1, no. 2, p. 480, Apr. 16, 1894.

are nearly all black; another, from Pulo Subi (north islet), June 12, 1900, shows a very distinct black nuchal band. The third example is from Bunguran Island, July 7, 1900, and is in badly worn condition; "stomach filled with small crabs." Doctor Abbott reports the species common along the shore of Bunguran Island.

Measurements of the three specimens are given in Table 7:

TABLE 7.—*Measurements of specimens of* Sauropatis chloris cyanescens

U.S. N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Tarsus
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174698	♀	Pulo Subi, north islet	June 12	W. L. Abbott	248	108.5	69.5	45.5	17
174697	♀	Sirhassen Island	June 10	do	260.5	112.5	74.5	50	18
174696	♀	Bunguran Island	July 7	do	266.5	107	72.5	51	16

[1] Measured in the flesh by the collector.

LACEDO PULCHELLA (Horsfield)

Dacelo pulchella HORSFIELD, Trans. Linn. Soc. London, vol. 13, p. 175, May, 1821. ("Java" [hills of Prowoto, about 20 miles southeast of Semarang, Java].)

One female, U.S.N.M. No. 174701, from Gunong Ranay, Bunguran Island, taken on July 5, 1900, by Doctor Abbott, apparently in no respect different from lower Malay Peninsula specimens. "Length 222. Bill red, dark brown above; iris gray; eyelids red; feet pale yellow brown. Stomach filled with insects. Shot in dense forest on Gunong Ranay."

The generic name *Carcineutes*,[58] by which this bird is commonly called, is many years posterior to *Lacedo* Reichenbach,[59] and was proposed by Cabanis and Heine [60] as a substitute for the latter because of unclassical formation. This is, of course, not sufficient excuse for the rejection of a name, and as there seems to be no other in this case, *Lacedo* should be restored.

CEYX RUFIDORSUS RUFIDORSUS Strickland

Ceyx rufidorsa STRICKLAND, Proc. Zool. Soc. London, vol. 14, p. 99, 1846. ("Malacca.")

A single adult male, U.S.N.M. No. 174700, was taken by Doctor Abbott on Pulo Lingung, near Bunguran Island, June —, 1900. "Length 146 mm. Bill and feet coral red. Shot in dense jungle." Rather small for true *Ceyx rufidorsus*, the wing measuring 57.5 mm., the exposed culmen 33.5 mm., but probably to be referred here.

Doctor Hartert has recorded this species [61] from Bunguran Island under the name *Ceyx euerythra*.

[58] Cabanis and Heine, Museum Heineanum, Theil 2, p. 163, 1860. (Type, *Dacelo pulchella* Horsfield.)
[59] Handbuch der speciellen Ornithologie, p. 41, 1851. (Type, *Dacelo pulchella* Horsfield.)
[60] Loc. cit.
[61] Nov. Zool., vol. 1, no. 2, p. 480, Apr. 16, 1894.

*ALCEDO ATTHIS BENGALENSIS Gmelin

[*Alcedo*] *bengalensis* GMELIN, Systema naturae, vol. 1, pt. 1, p. 450, July 25, 1788. ("Bengala.")

This race of kingfisher has been recorded by Doctor Hartert [62] from Bunguran Island.

Family MEROPIDAE

*MEROPS VIRIDIS Linnaeus

[*Merops*] *viridis* LINNAEUS, Systema naturae, ed. 10, vol. 1, p. 117, Jan. 1, 1758. ("Java, Benghala.")

Recorded from Bunguran Island by Doctor Hartert [63] as *Merops sumatranus*.[64]

Family BUCEROTIDAE

HYDROCISSA CONVEXA ZAMELAENA, new subspecies

Subspecific characters.—Similar to *Hydrocissa* [65] *convexa convexa*, from Sumatra, but somewhat larger; black area on terminal part of bill larger and extending broadly below the line separating the casque from the maxilla.

Description.—Type, adult male, U.S.N.M. No. 174704, Pulo Lingung, Natuna Islands, June 14, 1900; Dr. W. L. Abbott. Upper parts, middle tail feathers, and greater part of wings black, with a metallic gloss of dusky bluish green; inner edges of wing quills fuscous-black; broad tips on the primaries and secondaries, and all the rest of the tail feathers cream white; mastax, chin, and throat black; jugulum black with some greenish sheen; remainder of lower parts white; bill mostly white, but the base of the mandible is black, and a broad black band extends along the lower side of the casque from its tip back about to its middle and extends over on the upper median portion of the maxilla.

The six specimens obtained by Doctor Abbott are as follows:

Adult male (type), U.S.N.M. No. 174704, Pulo Lingung, June 14, 1900. Length in flesh, 864 mm. "Iris dark red; feet dark leaden."

Adult male, U.S.N.M. No. 174703, Pulo Lingung, June 17, 1900. Length in flesh, 838 mm. "Iris dull brownish red."

Adult male, U.S.N.M. No. 174706, Bunguran Island, June 28, 1900. Length in flesh, 870 mm.; weight, 2½ pounds. "Feet dark leaden; naked orbital skin dull blue; angles of jaws white."

Juvenal male, U.S.N.M. No. 174705, Pulo Lingung [June, 1900]. "Iris grayish white; feet pale leaden; bill pale greenish yellow (nearly jade color), a pale brownish patch each side of upper mandible."

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[62] Nov. Zool., vol. 1, no. 2, p. 480, Apr. 16, 1894.

[63] Nov. Zool., vol. 2, no. 3, p. 474, Aug. 17, 1895.

[64] For the change of name, *see* Hartert, Nov. Zool., vol. 17, no. 3, pp. 482–483, Dec. 15, 1910.

[65] For the change of the generic name *Anthracoceros* to *Hydrocissa*, *see* Oberholser, Proc. Biol. Soc. Washington, vol. 34, p. 136, June 30, 1921.

Adult male, U.S.N.M. No. 174702, Pulo Lingung, June 14, 1900. Length in flesh, 762 mm. "Iris dark brown."

Adult female, U.S.N.M. No. 174707, Bunguran Island, June 23, 1900. Length in flesh, 787 mm.

All the adults are in progress of molt, most of them of some wing quills, rectrices, and contour feathers. The single juvenal male (No. 174705) also shows evidences of molt among the body feathers, though the wings and tail seem to be intact. In the juvenal bird the bill is not yet of full size and the casque not yet grown to its full size, vertically, latitudinally, or longitudinally, and is anteriorly without the sharp vertical angle of the adult, but merges convexly into the culmen. The plumage resembles that of the adult except on the tail; the black portions are duller and more brownish, especially on the head, neck, and jugulum. The black markings on the bill, characteristic of the adult, are absent.

Doctor Abbott reported this hornbill common on Bunguran Island. Doctor Hartert has recorded it on also Pulo Pandak and Pulo Laut.[66]

This new race is apparently confined to the Natuna Islands.

Measurements of the specimens collected by Doctor Abbott are given in Table 8.

TABLE 8.—*Measurements of specimens of* Hydrocissa convexa zamelaena

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Bill from nostril	Height of bill to nostril	Tarsus	Middle toe without claw	Greatest length of casque	Height of casque at nostril
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174705	♂ juv.	Pulo Lingung	[June —]	W. L. Abbott	-----	292	278	-----	39	53	47	-----	-----
174704	♂	----do.[2]	June 14	----do	864	305	309	153	43.5	58	46.5	177	44
174703	♂	----do	June 17	----do	838	292	285	141.5	45	56	47	134	43
174705	♂	Bunguran Island.	June 28	----do	870	293	-----	155.5	44.5	56.5	45.5	172	51
Average of 3 adult males					857.3	296.7	297	150	44.3	56.8	46.3	161	46
174702	♀	Pulo Lingung	June 14	W. L. Abbott	762	287	264	137	41.5	54	43	136	33
174707	♀	Bunguran Island.	June 23	----do	787	274	281	127.5	42	53	43	111.5	29
Average of 2 adult females					774.5	280.5	277.5	132.3	41.8	53.5	43	123.8	31

[1] Measured in the flesh by the collector. [2] Type.

*ANORRHINUS GALERITUS (Temminck)

Buceros galeritus TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, vol. 2, livr. 88, texte to pl. 520, p. [1], May 14, 1831. ("Sumatra et de la partie occidentale de Bornéo.")

Doctor Hartert has recorded this species [67] from Bunguran Island.

[66] Nov. Zool., vol. 2, no. 3, p. 474, Aug. 17, 1895. [67] Nov. Zool., vol. 2, no. 3, p. 475, Aug. 17, 1895.

Family PHODILIDAE

PHODILUS BADIUS ARIXUTHUS, new subspecies

Subspecific characters.—Similar to *Phodilus badius badius* of Java, but larger; upper parts, lower parts, face, and legs lighter; white spots on tertials, back, and scapulars much larger.

Description.—Type, adult male, U.S.N.M. No. 174676, Bunguran Island, Natuna Islands, July 16, 1900; Dr. W. L. Abbott. Forehead dull white, slightly washed with russet; crown, occiput, and nape, deep tawny, the occiput with a few pale ochraceous-tawny feathers, which have small roundish subapical dark brown spots; cervical collar ochraceous-tawny, sparingly spotted with dark brown; rest of upper parts tawny, the feathers ochraceous-tawny beneath the exposed surface, and marked medially with several rather small dark brown spots, these often alternated with larger white spots, the latter largest toward the distal ends of the feathers and on the scapulars; tail russet, the basal portion of inner webs of the feathers buffy white, all the inner webs (except the terminal portion) barred irregularly with blackish brown, the outer webs sparingly spotted with the same; wing quills rather light russet, their tips pale buffy, the outer web of outermost primary and basal portion of inner webs of secondaries, buffy white, and all the quills barred on inner webs, the outermost primary on both webs, with black, the tertials with long median white terminal spots; upper wing coverts tawny, the greater series barred on their inner webs with black, the inner ones broadly tipped with white, the outer ones with buffy, the median and lesser coverts more or less spotted with dark brown, black, and white; face white, washed slightly with tawny; an incomplete orbital ring, lacking behind, deep tawny; facial ruff silvery white washed with tawny, on the sides of the neck passing posteriorly into ochraceous-tawny, on the feathers of the throat portion of the ruff with broad scalelike tips of deep tawny; sides of neck ochraceous-tawny, spotted with dark brown; chin and throat white, slightly tinged with tawny, and except for the deep tawny tips on the feathers of the facial ruff, immaculate; remainder of lower surface, except thighs, between cinnamon-buff and pinkish cinnamon, in places lighter, and more or less sparingly marked with small roundish spots of dark brown; thighs ochraceous-tawny, immaculate; lining of wing pale ochraceous-buff inclosing a central area of tawny; "iris dark brown; bill horny white; cere reddish purple; feet pale fleshy; claws brownish white."

Wing, 185 mm.; tail, 72; exposed culmen, 27; culmen without cere, 22; height of bill at base, 19.5; tarsus, 42; middle toe without claw, 33; total length in flesh, 261 mm.

Although we have but a single specimen of this rare owl from the Natuna Islands, it differs so much from the Javan bird that it evi-

dently represents a hitherto undescribed race. This species appears not to have been recorded from the Natuna Islands until now.

With the addition of the present new race there are now 4 subspecies of *Phodilus badius*, as follows:

1. *Phodilus badius badius* (Horsfield).

Strix badia Horsfield, Zoological researches in Java, pt. 4, pl. 36 and text, June, 1822. ("Java, district of Pugar, and low hills south of the capital of Surakarta.")

Geographic distribution.—Java.

2. *Phodilus badius arixuthus* Oberholser.

Phodilus badius arixuthus Oberholser, antea, p. 40.

Geographic distribution.—Natuna Islands; ? Borneo.

3. *Phodilus badius abbotti* Oberholser.

Phodilus badius abbotti Oberholser, Journ. Washington Acad. Sci., vol. 14, no. 13, p. 302, July 19, 1924. ("Province Wellesley, Federated Malay States.")

Geographic distribution.—Malay Peninsula to Burma.

4. *Phodilus badius assimilis* Hume.

Phodilus assimilis Hume, Stray Feathers, vol. 5, no. 2, p. 138, June, 1877. ("Ceylon.")

Geographic distribution.—Ceylon.

Family BUBONIDAE

*NINOX SCUTULATA SCUTULATA (Raffles)

Strix scutulata Raffles, Trans. Linn. Soc. London, vol. 13, pt. 2, p. 280, Nov. or Dec., 1822. ("Sumatra.")

Specimens of this species, recorded from Bunguran Island by Doctor Hartert,[68] belong probably to this race.

*OTUS BAKKAMOENA LEMPIJI (Horsfield)

Strix Lempiji Horsfield, Trans. Linn. Soc. London, vol. 13, pt. 1, p. 140, May, 1821. ("Java.")

Specimens of this owl from Bunguran Island are recorded by Doctor Hartert.[69]

Family PODARGIDAE

*BATRACHOSTOMUS STELLATUS (Gould)

Podargus stellatus Gould, Proc. Zool. Soc. London, vol. 5, for 1837, p. 43, Dec. 5, 1837. ("Java.")

A single specimen from 1,000 feet altitude on Mount Ranay, Bunguran Island, collected in July, 1894, has been reported by Doctor Hartert.[70]

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[68] Nov. Zool., vol. 2, no. 3, p. 476, Aug. 17, 1895.
[69] Nov. Zool., vol. 1, no. 2, p. 481, Apr. 16, 1894 .
[70] Nov. Zool., vol. 2, no. 3, p. 472, Aug. 17, 1895.

*BATRACHOSTOMUS AURITUS (Gray)

P[odargus]. Auritus J. E. Gray, *in* Griffith's Animal kingdom, vol. 7, pt. 17, p. 114, pl. —, Nov., 1828 (Vigors MS.). (No locality; but locality given as "Sumatra" by Vigors, *in* Raffles's Memoir of Sir Thomas Stamford Raffles, p. 653, 1830.)

This species has been recorded by Doctor Hartert [71] from Bunguran Island.

Family HEMIPROCNIDAE

HEMIPROCNE LONGIPENNIS ANOCHRA, new subspecies

Subspecific characters.—Similar to *Hemiprocne longipennis harterti*, from Sumatra, but with rump and upper tail coverts of a darker and duller gray; anterior lower parts darker, duller, and not so bluish (more brownish).

Description.—Adult female, U.S.N.M. No. 174684, Bunguran Island, Natuna Islands, July 3, 1900; Dr. W. L. Abbott. Upper parts metallic Lincoln green, with irregular spots of bronzy, of metallic dusky dull bluish green, metallic dark delft blue, and of metallic dusky slate-black; rump and upper tail coverts dull storm gray; tail chaetura black, on broad terminal portion with a sheen like the green of the back, but much duller, outer webs and subterminal part more or less bluish, but much duller than on the upper parts; wings chaetura black, the inner webs of the quills fuscous, the outer primaries with a purplish sheen, the inner primaries metallic dark ivy green, the secondaries with their outer webs bluish like the upper parts, but duller, longest tertial slightly metallic dull andover green on outer web, between light drab and light grayish olive on inner web, inner tertials between pale mouse gray and olive-gray; lores velvety black; sides of head, of neck, and of breast similar in color to the upper parts, but the auriculars and subocular region duller and more brownish; chin mouse gray; throat, breast, and jugulum, between mouse gray and dark olive-gray; sides and flanks between light mouse gray and deep olive-gray, shading into white medially; lower tail coverts rather light neutral gray; shading laterally through pallid neutral gray to almost white medially; crissum and flank tufts white; lining of wing somewhat metallic dull dark ivy green, the edges of the wing darker, verging toward chaetura black but still with some greenish sheen.

In addition to the Natuna Islands, this new race inhabits the Anamba Islands, the Malay Peninsula, Tenasserim, and Burma. This division of *Hemiprocne longipennis harterti* restricts the geographical distribution of the latter to chiefly the islands of Sumatra, Banka, Billiton, and Borneo. Birds from the Malay Peninsula are intermediate, but are nearer the Natuna Islands form. Those from the Anamba Islands appear to be just the same as Natuna birds.

[71] Nov. Zool., vol. 2, no. 3, p. 472, Aug. 17, 1895.

Doctor Abbott obtained the following two specimens from the Natuna Islands:

Adult female (type), U.S.N.M. No. 174684, Bunguran Island, July 3, 1900. Length in flesh, 162 mm.

Adult female, U.S.N.M. No. 174685, Pulo Lingung, near Bunguran Island, June 17, 1900. "Feet livid purplish brown; bill and claws black." Length in flesh, 210 mm.

The latter has the sides of the crissum much shaded with gray, as in *Hemiprocne wallacei*, though this color is darker and absent, or nearly so, on the middle feathers. Most of the specimens of the large series of this species in the United States National Museum have more or less gray on the lateral feathers of the lower tail coverts, although this part is usually described as pure white.

These two Natuna birds are in process of molting contour feathers, wing quills, and tail feathers. Notwithstanding this, the measurements given in Table 9 may be considered reliable.

TABLE 9.—*Measurements of specimens of* Hemiprocne longipennis anochra

U.S. N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Tarsus
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174684	♀	Bunguran Island [2]	July 3	W. L. Abbott	162	155	-------	7	7.5
174685	♀	Pulo Lingung	June 17	do	210	167	104	7.2	8
Average of two females					186	161	104	7.1	7.8

[1] Measured in the flesh by the collector. [2] Type.

The 5 subspecies of *Hemiprocne longipennis* that seem to be recognizable are as follows:

1. *Hemiprocne longipennis longipennis* (Rafinesque).

Hirundo longipennis RAFINESQUE, Bull. Sci. Soc. Philom., vol. 3, no. 68, année 6, no. 8, p. 153, Oct., 1802. ("Java.")

Hirundo Klecho HORSFIELD, Trans. Linn. Soc. London, vol. 13, pt. 1, p. 143, May, 1821. ("Java.")

Geographic distribution.—Java and Bali.

2. *Hemiprocne longipennis harterti* Stresemann.

Hemiprocne longipennis harterti STRESEMANN, Nov. Zool., vol. 20, no. 2, p. 339, June 17, 1913. ("Deli, N. O. Sumatra.")

Geographic distribution.—Borneo, Billiton, Banka, and Sumatra, north to the island of Linga.

3. *Hemiprocne longipennis ocyptera* Oberholser.

Hemiprocne longipennis ocyptera OBERHOLSER, Smithsonian Misc. Coll., vol. 60, no. 7, p. 7, Oct. 26, 1912. ("Lafau, Nias Island.")

Geographic distribution.—Island of Nias, Barussan Islands, western Sumatra.

4. *Hemiprocne longipennis thoa* Oberholser.

Hemiprocne longipennis thoa Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 8, Oct. 26, 1912. ("Pulo Pinie, Batu Islands.")

Geographic distribution.—Batu Islands, Barussan Islands, western Sumatra.

5. *Hemiprocne longipennis anochra* Oberholser.

Hemiprocne longipennis anochra Oberholser, antea, p. 42.

Geographic distribution.—Natuna Islands, Anamba Islands, Malay Peninsula, Tenasserim, and Burma.

*HEMIPROCNE COMATA COMATA (Temminck)

Cypselus comatus Temminck, Nouveau recueil de planches coloriées d'oiseaux, vol. 4, livr. 45, texte to pl. 268, p. [1], Apr., 1824. ("Sumatra.")

Doctor Hartert has recorded [72] a single specimen of this bird taken in September at Gibintang, on Bunguran Island.

Family MICROPODIDAE

*AERODRAMUS VESTITUS AMECHANUS (Oberholser)

Collocalia fuciphaga amechana Oberholser, Proc. U. S. Nat. Mus., vol. 42, p. 13, Mar. 6, 1912, ("Pulo Jimaja, Anamba Islands.")

Under the name *Collocalia fuciphaga* Doctor Hartert reports [73] several specimens of edible swiftlets from Bunguran Island. Though we have not examined these, they are probably referable to the form here listed.

The generic name here used was originally proposed by the present writer [74] as a subgenus to include the species of the genus *Collocalia* with feathers on the tarsi, and it now seems desirable to separate these species generically.

COLLOCALIA LINCHI CYANOPTILA Oberholser

Collocalia linchi cyanoptila Oberholser, Proc. Acad. Nat. Sci. Philadelphia, pp. 182, 205, Apr., 1906 (July 26, 1906). ("Bunguran Island, Natuna Islands.")

The present subspecies of this little swift is apparently not found outside the Natuna Islands.

Among the birds collected by Doctor Abbott are three specimens of this race:

Adult female (type), U.S.N.M. No. 174688, Bunguran Island, July 1, 1900. Length in flesh, 108 mm.

Adult female, U.S.N.M. No. 174687, Bunguran Island, July 1, 1900. Length in flesh, 104 mm.

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[72] Nov. Zool., vol. 2, no. 3, p. 472, Aug. 17, 1895.
[73] Nov. Zool., vol. 2, no. 3, p. 472, Aug. 17, 1895.
[74] Proc. Acad. Nat. Sci. Philadelphia, pp. 179, 182, July 26, 1906. (Type, *Collocalia innominata* Hume.)

Adult, sex unknown, U.S.N.M. No. 174686, Bunguran Island, July 11, 1900.

All these specimens show molt among the contour feathers, and one, No. 174686, taken July 11, also among the wing quills.

Doctor Abbott reported this bird common among the coco palms on Bunguran Island.

Measurements are given in Table 10.

TABLE 10.—*Measurements of specimens of* Collocalia linchi cyanoptila

U.S. N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Tarsus
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174688	♀	Bunguran Island [2]	July 1	W.L.Abbott	108	107	41	4.5	7.5
174687	♀	do	do	do	104	102	41	4.5	8.5
174686	----	do	July 11	do	104	108	43	4.5	8.0

[1] Measured in the flesh by the collector. [2] Type.

CHAETURA GIGANTEA GIGANTEA (Temminck)

Cypselus giganteus TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, vol. 4, livr. 61, texte to pl. 364, p. [1], Aug. 27, 1825. ("Java"; "district sauvage de Bantam.")

Two specimens were obtained by Doctor Abbott:

Adult female, U.S.N.M. No. 174682, Bunguran Island, July 11, 1900. Length in flesh, 222 mm.

Adult female, U.S.N.M. No. 174683, Bunguran Island, July 11, 1900. Length in flesh, 242 mm.

These appear to be identical with specimens from the Philippine Islands and the southern Malay Peninsula. Both are in process of molt.

*CHAETURA LEUCOPYGIALIS (Blyth)

Acanthylis leucopygialis BLYTH, Journ. Asiatic Soc. Bengal, vol. 18, no. 206, p. 809, Aug., 1849. ("Pinang.")

This species Doctor Hartert has recorded [75] from Bunguran Island.

Family TROGONIDAE

*PYROTROGON DUVAUCELII (Temminck)

Trogon duvaucelii TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, vol. 3, livr. 49, texte to pl. 291, p. [1], Aug. 28, 1824. ("Sumatra.")

This species was reported by Doctor Hartert [76] as collected on Bunguran Island.

[75] Nov. Zool., vol. 2, no. 3, p. 472, Aug. 17, 1895. [76] Nov. Zool., vol. 1, no. 2, p. 481, Apr. 16, 1894.

Family PICIDAE

*THRIPONAX JAVENSIS JAVENSIS (Horsfield)

Picus Javensis Horsfield, Trans. Linn. Soc. London, vol. 13, pt. 1, p. 175, May, 1821. ("Java.")

Doctor Hartert has reported this species [77] from a specimen taken at an altitude of 1,000 feet on Mount Ranay, Bunguran Island.

*MULLERIPICUS PULVERULENTUS PULVERULENTUS (Temminck)

Picus pulverulentus Temminck, Nouveau recueil de planches coloriées d'oiseaux, vol. 4, livr. 66, texte to pl. 389, p. [1], June 10, 1826. ("Java et de Sumatra.")

Doctor Hartert has recorded this species [78] from specimens obtained on Bunguran Island.

*CHRYSOCOLAPTES VALIDUS XANTHOPYGIUS Finsch

Chrysocolaptes xanthopygius Finsch, Notes Leyden Mus., vol. 26, nos. 1, 2, p. 34, July 15, 1905. ("oberen Mahakam [Blu-u].")

A single specimen, from Mount Ranay, Bunguran Island, was recorded by Doctor Hartert.[79]

*MICROPTERNUS BADIOSUS (Bonaparte)

[*Meiglyptes*] *badiosus* Bonaparte, Conspectus generum avium, vol. 1, p. 113, June 24, 1850 (Temminck MS.). ("Borneo.")

Doctor Hartert has recorded [80] a specimen of this Bornean species from Cape Datu, Bunguran Island.

*MEIGLYPTES TRISTIS MICROPTERUS Hesse

Meiglyptes tristis micropterus Hesse, Orn. Monatsb., vol. 19, no. 11, p. 182, Nov., 1911. ("Borneo, Gt. Natuna.")

This species was recorded by Doctor Hartert [81] from Bunguran Island.

MEIGLYPTES TUKKI AZALEUS, new subspecies

Subspecific characters.—Similar to *Meiglyptes tukki tukki*, from Sumatra, but decidedly larger; brown of head lighter, more rufescent; olivaceous of rest of upper surface lighter and more yellowish (less sooty); lower parts lighter and averaging somewhat more yellowish olivaceous (less sooty brown), and more extensively barred posteriorly; black area of jugulum less extensive.

Description.—Type, adult male, U.S.N.M. No. 174694, Bunguran Island, Natuna Islands, July 6, 1900; Dr. W. L. Abbott. Crown and lores rather brownish Saccardo's umber (verging somewhat to snuff brown); nape between brownish olive and mummy brown; back and

[77] Nov. Zool., vol. 2, no. 3, p. 474, Aug. 17, 1895.
[78] Nov. Zool., vol. 2, no. 3, p 474, Aug. 17, 1895.
[79] Nov. Zool., vol. 2, no. 3, p. 474, Aug. 17, 1895.
[80] Nov. Zool., vol. 2, no. 3, p. 474, Aug. 17, 1895.
[81] Nov. Zool., vol. 2, no. 3, p. 474, Aug. 17, 1895.

scapulars between Saccardo's olive and brownish olive, barred with brown, between buckthorn brown and old gold; rump and upper tail coverts dark Saccardo's olive, barred with light olive lake; tail sepia, more olivaceous basally, and barred with tawny-olive; wing quills and primary coverts brownish olive, verging toward sepia, more brownish externally, barred with clay color, honey yellow, and chamois, and on the inner edges of the wing quills with colonial buff; lesser wing coverts like the back, but with very slightly paler tips, remaining upper wing coverts between brownish olive and sepia, barred with tawny-olive; auriculars and sides of the head rather rufescent light brownish olive; sides of the neck like the back, but rather more greenish; malar stripe between nopal red and Brazil red, a spot on each side of the jugulum buff-yellow; chin ochraceous-tawny barred with fuscous; upper throat chamois, barred with fuscous-black; jugulum and upper breast between fuscous-black and fuscous, barred with chamois and deep colonial buff; lower breast medal bronze, barred with tawny-olive; abdomen, flanks, and thighs, buffy citrine verging toward Dresden brown and barred with dull and rather brownish old gold; sides between brownish olive and olive, barred with colonial buff, deep colonial buff, chamois, and dull primrose yellow; crissum of the same color as the sides, and barred with honey yellow, chamois, colonial buff, and intermediate shades; lining of wing varying from honey yellow to chamois.

From the recently described *Meiglyptes tukki percnerpes* Oberholser [82] of Borneo, the present race may readily be distinguished by its larger size; darker, decidedly more yellowish (olivaceous) upper surface; more rufescent head; and by having the lower parts somewhat darker, less dull, and more yellowish (olivaceous), and noticeably more extensively and distinctly barred, almost all the posterior parts, even the middle of the abdomen, being thus marked. It differs from *Meiglyptes tukki brunneus* of the Malay Peninsula in larger size, more rufescent head, more yellowish olivaceous upper parts (except head), also more extensively barred, darker, and more yellowish olivaceous lower surface.

Although we have not examined *Meiglyptes tukki pulonis* Chasen and Kloss,[83] from Banguey Island, north Borneo, the present bird apparently may readily be separated from that island race by reason of its more yellowish olivaceous (less brownish) upper surface, more extensively barred, darker, and more yellowish lower parts.

The specimens collected by Doctor Abbott are as follows:

Adult male, U.S.N.M. No. 174690, Bunguran Island, June 27, 1900. "Iris dark red; feet dirty brownish olive."

Adult male (type), U.S.N.M. No. 174694, Bunguran Island, July 16, 1900. "Iris dull red."

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[82] Journ. Washington Acad. Sci., vol. 14, no. 13, p. 301, July 19, 1924.

[83] Journ. f. Orn., Ergänzungsband 2, p. 112, Oct. 29, 1929.

Adult female, U.S.N.M. No. 174691, Bunguran Island, June 27, 1900. "Feet dull olive."

Adult female, U.S.N.M. No. 174695, Bunguran Island, July 16, 1900.

The adult female differs from the adult male in color only in the absence of the red malar stripe. The juvenal female is very similar to the adult, except for being lighter and more grayish and buffy instead of more olivaceous and yellowish.

Juvenal female, U.S.N.M. No. 174692, Bunguran Island, June 27, 1900. "Upper mandible black; lower mandible leaden; feet dark olive brown."

Juvenal [female], U.S.N.M. No. 174693, Bunguran Island, June 27, 1900.

The two adult males, No. 174690, taken on June 27, and No. 174694, July 16, are molting both wing quills and contour feathers; one of the adult females, No. 174695, July 16, is molting only the contour feathers; but the other adult female, No. 174691, June 27, shows no indication of feather renewal. Both the juvenal females, taken on June 27, are in process of molting the contour feathers, but not the rectrices or remiges.

Measurements are given in Table 11.

TABLE 11.—*Measurements of specimens of* Meiglyptes tukki azaleus

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174690	♂	Bunguran Island [2]	June 27	W. L. Abbott	225	107	66	23	9	22	16
174694	♂	do	July 16	do	229	107	67.5	24	9.5	21.5	15.5
Average of 2 males					227	107	66.8	23.5	9.3	21.8	15.8
174691	♀	Bunguran Island	June 27	W. L. Abbott	225	105.5	62.5	22	9	21.5	16.5
174692	♀	do	do	do	229	103.5	67	20	8	21.5	16
174693	♀ [juv.]	do	do	do	229	105	69	20	8	21	15.5
174695	♀ [juv.]	do	July 16	do	225	103	69	21	8	20.5	16

[1] Measured in the flesh by the collector. [2] Type.

According to the available material there seem to be 7 recognizable races of *Meiglyptes tukki*, as given below:

1. *Meiglyptes tukki tukki* (Lesson).

Picus tukki LESSON, Rev. Zool., vol. 2, p. 167, June, 1839. ("Sumatra.")

P[icus]. luridus NITZSCH, System der Pterylographie, p. 137, 1840 (footnote). ("Sumatrensischen.")

Meiglyptes tucci BRÜGGEMANN, Abh. Nat. Ver. Bremen, vol. 5, p. 455, 1877. (Nom. emend. pro *Meiglyptes tukki* Lesson.)

Geographic distribution.—Sumatra, and the neighboring islands of Banka and Billiton.

2. *Meiglyptes tukki calceuticus* Oberholser.

Meiglyptes tukki calceuticus Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 6, Oct. 26, 1912. ("Pulo Tuanku, Banjak Islands.")

Geographic distribution.—Banjak Islands and Batu Islands, in the Barussan Chain, western Sumatra.

3. *Meiglyptes tukki hylodromus* Oberholser.

Meiglyptes tukki hylodromus Oberholser, Journ. Washington Acad. Sci., vol. 14, no. 13, p. 301, July 19, 1924. ("Mojeia River, Nias Island, Barussan Islands, western Sumatra.")

Geographic distribution.—Nias Island, Barussan Islands, western Sumatra.

4. *Meiglyptes tukki percnerpes* Oberholser.

Meiglyptes tukki percnerpes Oberholser, Journ. Washington Acad. Sci., vol. 14, No. 13, p. 301, July 19, 1924. ("Butu Jurong, southwestern Borneo.")

Geographic distribution.—Borneo.

5. *Meiglyptes tukki pulonis* Chasen and Kloss.

Meiglyptes tukki pulonis Chasen and Kloss, Journ. f. Orn., Ergänzungsband 2, p. 112, Oct 29, 1929 ("Banguey Island, North Borneo.")

Geographic distribution.—Banguey Island, North Borneo.

6. *Meiglyptes tukki azaleus* Oberholser.

Meiglyptes tukki azaleus Oberholser, antea, p. 46.

Geographic distribution.—Natuna Islands.

7. *Meiglyptes tukki brunneus* (Eyton).

Hemicircus brunneus Eyton, Proc. Zool. Soc. London, vol. 7, p. 106, Nov., 1839. ("Malaya.") ("Malacca," *fide* Stoliczka, Journ. Asiatic Soc. Bengal, vol. 39, pt. 2, p. 295, 1870.)

Meiglyptes fuscus Peale, United States exploring expedition, vol. 8, p. 132, 1848. ("Singapore.")

Meiglyptes marginatus Stoliczka, Journ. Asiatic Soc. Bengal, vol. 39, pt. 2, p. 295, 1870 (Reinwardt MS.). ("Malacca.")

Geographic distribution.—Malay Peninsula, north to southern Tenasserim and south to Singapore Island.

Family EURYLAIMIDAE

*EURYLAIMUS JAVANICUS Horsfield

Eurylaimus Javanicus Horsfield, Trans. Linn. Soc. London, vol. 13, pt. 1, p. 170, May, 1821. ("Java.")

A specimen of this species from Mount Ranay, at 1,000 feet altitude, on Bunguran Island, has been recorded by Doctor Hartert.[84]

EURYLAIMUS OCHROMALUS OCHROMALUS Raffles

Eurylaimus ochromalus Raffles, Trans. Linn. Soc. London, vol. 13, pt. 2, p. 297, Nov. or Dec., 1822. ("Singapore and in the interior of Sumatra.")

Three specimens were secured by Doctor Abbott:

Adult male, U.S.N.M. No. 174732, Bunguran Island, June 27, 1900. Length in flesh, 171 mm.

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[84] Nov. Zool., vol. 2, no. 3, p. 471, Aug. 17, 1895.

Adult male, U.S.N.M. No. 174733, Bunguran Island, July 22, 1900. Length in flesh, 165 mm. "Iris yellow; bill blue, black at tip and along commissure."

Juvenal, sex unknown, U.S.N.M. No. 174734, Bunguran Island, July 19, 1900. Length in flesh, 159 mm. "Iris bluish white."

The adult male taken on June 27 (No. 174732) shows no trace of molt, but the other, taken on July 22, is molting both wing quills and contour feathers.

TABLE 12.—*Measurements of specimens of* Eurylaimus ochromalus ochromalus

U.S.N.M.No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174732	♂	Bunguran Island	June 27	W. L. Abbott	171	79	47	17	9	20	13
174733	♂	do	July 22	do	165	80.5	46	17	9.5	21	13
Average of 2 males					168	79.8	46.5	17	9.8	20.5	13
174734	—juv	Bunguran Island	July 19	W. L. Abbott	159	75	43	16	8	21	13

[1] Measured in the flesh by the collector.

The juvenal plumage (No. 174734) differs interestingly from that of the adult male, as follows: Black of all upper parts except the tail, decidedly brownish; a pale yellow superciliary stripe; white nuchal collar washed with yellow; middle of back with roundish spots (instead of streaks) of yellow; median and greater wing coverts with terminal spots of yellow; bases of feathers of back nearly all blackish or brownish (instead of pure white); a narrow whitish rictal streak; chin and middle of upper throat dull grayish white washed with yellowish, and slightly mixed with blackish; jugulum almost pure white (instead of buffy); black pectoral band broken, reaching no farther than the sides of the breast; breast dull grayish white, washed with yellowish and obscurely streaked with blackish; sides, flanks, and abdomen, light yellow, obscurely streaked with blackish, and only the middle of upper abdomen and of lower breast vinaceous; bill brownish.

Attention has already been called [85] to the fact that the original spelling of the specific name of this species is as here given.

*CORYDON SUMATRANUS (Raffles)

Coracias Sumatranus RAFFLES, Trans. Linn. Soc. London, vol. 13, pt. 2, p. 303, Nov. or Dec., 1822. ("Sumatra.")

Doctor Hartert has recorded [86] a single specimen of this species taken in July, 1894, at an altitude of 1,000 feet on Mount Ranay on Bunguran Island.

[85] Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, Oct. 26, 1912.

[86] Nov. Zool., vol. 2, no. 3, p. 472, Aug. 17, 1895.

Family PITTIDAE

*PITTA MOLUCCENSIS (Müller)

Turdus Moluccensis MÜLLER, Linné Vollständigen Natursystems, Supplements- und Register-Band, p. 144, after January 4, 1776. ("In den moluccischen Inseln"; type locality designated as Tenasserim by Baker, Journ. Bombay Nat. Hist. Soc., vol. 28, no. 1, p. 92, Dec. 30, 1921.)

This species has been recorded by Doctor Hartert [87] from Bunguran Island, on the basis of a single male specimen.

Family HIRUNDINIDAE

*HIRUNDO RUSTICA GUTTURALIS Scopoli

Hirundo gutturalis SCOPOLI, Deliciae florae et faunae Insubricae, pt. 2, p. 96, 1786. (Based on Sonnerat, Voyage à la Nouvelle Guinée, p. 118, pl. 76; type locality, Antigua, Panay Island, Philippine Islands.)

Doctor Hartert has recorded [88] this race from Sirhassen and Bunguran Islands.

HYPUROLEPIS JAVANICA MESATA, new subspecies

Subspecific characters.—Similar to *Hypurolepis javanica javanica*, but throat and forehead darker; median posterior lower parts decidedly paler, sometimes whitish.

Description.—Type, adult male, U.S.N.M. No. 174837, Pulo Seraia, Natuna Islands, May 29, 1900; Dr. W. L. Abbott. Sinciput bay; rest of upper surface shining metallic bluish black; tail black, slightly brownish (the inner webs most so), and with a slight bluish sheen, all the rectrices except the middle pair with subterminal white spots on their inner webs, these spots smallest on the outermost pair, and gradually increasing on the successive inner pairs; wings black like the tail, but inner webs of secondaries and of the primaries except the terminal portion, fuscous, paling basally; greater and median superior wing coverts narrowly, the lesser coverts broadly, margined with the shining metallic bluish black of the upper surface; lores brownish black; subocular streak, postocular region, and sides of neck shining metallic bluish black; cheeks, chin, throat, and jugulum tawny; upper breast, sides, flanks, and under tail coverts drab, in places rather brownish, with edgings of paler or whitish; lower breast and abdomen dull brownish white, the feathers with pale drab centers and narrow drab shaft lines, these darker centers least conspicuous on middle of abdomen, leaving this the most whitish portion; axillars drab; under wing coverts fuscous, with edgings, many of them broad, of drab and snuff brown; "iris dark brown; bill and feet black."

Measurements.—Male [89]: Wing, 97.5–105 (average, 101.6) mm.; tail, 42–45.5 (43.6); exposed culmen, 8–9 (8.6); height of bill at base, 3.5–4.5 (3.0); tarsus, 9–9.5 (9.3); middle toe without claw, 9–10 (9.6). Female [89]: Wing, 99–105.5 (average, 101.5) mm.; tail, 39.5–48 (43.7);

[87] Nov. Zool., vol. 1, no. 2, p. 480, Apr. 16, 1894.
[88] Nov. Zool., vol. 1, no. 2, p. 480, Apr. 16, 1894.
[89] Four specimens, from the Natuna Islands and Borneo.

exposed culmen, 7.5–9 (8.4); height of bill at base, 3–3.5 (3.4); tarsus, 10; middle toe without claw, 10.

Of the two examples obtained in the Natuna Islands by Doctor Abbott, one, the type, was taken on Pulo Seraia, where a number of others were seen along the shore. The other, a juvenal female, collected on Bunguran Island, differs very little in color from the adult of the same sex. The latter, taken on June 26, 1900, shows evidences of molt along the contour feathers, and is in the midst of the molt of both wing and tail feathers. Measurements of these two birds are given in Table 13.

Birds from Borneo are apparently the same as those from the Natuna Islands, and they have been considered together in making comparisons of this new race. From *Hypurolepis javanica abbotti* [90] of the Anamba Islands, it differs most obviously in the duller, more brownish, laterally lighter, medially less whitish, posterior lower parts.

TABLE 13.—*Measurements of specimens of* Hypurolepis javanica mesata

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174837	♂	Pulo Seraia [2]	May 29	W. L. Abbott	136	99.5	45.5	9	4	9	9.5
174836	♀juv.	Bunguran Island	June 26	do	118	-----	-----	7.5	3	10	10

[1] Measured in the flesh by the collector. [2] Type.

The 7 subspecies of *Hypurolepis javanica* that seem to be recognizable are as below:

1. *Hypurolepis javanica javanica* (Sparrman).

Hirundo javanica SPARRMAN, Museum Carlsonianum, fasc. 4, no. C, pl. 100, 1789. ("in Java, sub terra.")

Geographic distribution.—Java.

2. *Hypurolepis javanica mesata* Oberholser.

Hypurolepis javanica mesata OBERHOLSER, antea, p. 51.

Geographic distribution.—Borneo and the Natuna Islands.

3. *Hypurolepis javanica hypolampra* Oberholser.

Hypurolepis javanica hypolampra OBERHOLSER, Journ. Washington Acad. Sci., vol. 16, no. 19, p. 515, Nov. 18, 1926. ("Lafau, Nias Island, Barussan Islands, western Sumatra.")

Geographic distribution.—Island of Nias, Sumatra, and probably also the southern Malay Peninsula.

[90] Oberholser, U. S. Nat. Mus. Bull. 98, p. 32, June 30, 1917.

4. *Hypurolepis javanica domicola* (Jerdon).

Hirundo domicola Jerdon, Madras Journ. Lit. and Sci., vol. 13, pt. 1, no. 30, p. 173, "April, 1844." ("Neilgherries.")

Geographic distribution.—Southern India and Ceylon.

5. *Hypurolepis javanica abbotti* Oberholser.

Hypurolepis javanica abbotti Oberholser, U. S. Nat. Mus. Bull. 98, p. 32, June 30, 1917. ("Pulo Manguan, Anamba Islands.")

Geographic distribution.—Anamba Islands and Tambelan Islands, South China Sea.

6. *Hypurolepis javanica mallopega* Oberholser.

Hypurolepis javanica mallopega Oberholser, Journ. Washington Acad. Sci., vol. 16, no. 19, p. 515, Nov. 18, 1926. ("Mt. Santo Tomas, altitude 5,250 feet, Benguet, Island of Luzon, Philippine Islands.")

Geographic distribution.—Philippine Islands.

7. *Hypurolepis javanica frontalis* (Quoy and Gaimard).

Hirundo frontalis Quoy and Gaimard, Voyage l'Astrolabe, Zoologie, vol. 1, p. 204, Atlas, pl. 12, fig. 1, 1830. ("hâvre de Dorey, à la Nouvelle Guinée.")

Geographic distribution.—Celebes and Lombok Islands, east to the Molucca Islands, New Guinea and adjacent islands, and the islands in Torres Strait.

Family ARTAMIDAE

ARTAMUS LEUCORYN. MACROTERUS, new subspecies

Subspecific characters.—Like *Artamus leucoryn. leucoryn.*, from the Philippine Islands, but larger; throat and sides of neck averaging paler; and interscapulum more brownish.

Description.—Type, adult male, U.S.N.M. No. 174713, Sirhassen Island, Natuna Islands, June 1, 1900, Dr. W. L. Abbott. Pileum and cervix dark mouse gray, the lower cervix somewhat more brownish; scapulars and back between deep brownish drab and fuscous, shading into the blackish brown of the rump; upper tail coverts white; wings blackish slate, the lesser coverts lighter, the terminal portion of primaries slate-black, the inner margins of all the quills lighter, more brownish; tail slate-black, the inner edges of rectrices somewhat paler and more brownish; lores and nasal plumes black; sides of head and neck, together with chin and throat, dark mouse gray, the chin rather darker; edge of under surface of wing blackish slate; rest of lower parts, including the lining of wing, white. "Iris dark brown; feet leaden blue; bill leaden blue, tip black."

Doctor Abbott obtained the following 10 specimens:

Adult male (type), U.S.N.M. No. 174713, Sirhassen Island, June 1, 1900.

Adult male, U.S.N.M. No. 174710, Sirhassen Island, June 1, 1900. "Bill leaden, black at tip; iris dark brown; feet brownish leaden; claws black."

Adult male, U.S.N.M. No. 174708, Sirhassen Island, June 1, 1900. "Toes leaden; tarsi greenish."

Adult male, U.S.N.M. No. 174712, Sirhassen Island, June 1, 1900. "Bill leaden blue, tip black; feet leaden, claws black."

Adult male, U.S.N.M. No. 174714, Sirhassen Island, June 9, 1900.

Adult male, U.S.N.M. No. 174717, Pulo Subi, June 13, 1900. "Bill leaden, tip black; feet leaden."

Adult male, U.S.N.M. No. 174715, Bunguran Island, June 28, 1900. "Feet leaden blue."

Adult male, U.S.N.M. No. 174716, Bunguran Island, June 28, 1900.

Adult female, U.S.N.M. No. 174711, Sirhassen Island, June 1, 1900. "Feet leaden; iris dark brown."

Adult female, U.S.N.M. No. 174709, Sirhassen Island, June 1, 1900. "Iris dark brown; bill leaden, black at tip; feet leaden blue."

All these except three (Nos. 174712, 174713, and 174717) show the beginnings of molt among the feathers of head, throat, or hind neck, but in most of the individuals it is not evident without close examination, and in no case has it yet involved the wing quills or rectrices.

Measurements are given in Table 14.

Birds of this species from the Natuna Islands were referred provisionally to the Philippine race, *Artamus leucoryn. leucoryn.*, by Doctor Stresemann,[91] but comparison of the present 10 adults with a large series of Philippine specimens indicates that there are subspecific differences between them. The Natuna birds are accordingly here separated as a new race, though not on the characters mentioned by Doctor Stresemann. The chief individual variation among the Natuna birds is in the depth of color on the head, and in the more sooty or slaty shade of the back and scapulars, although this latter, while producing an occasional specimen difficult to distinguish in color from Philippine birds, yet does not vitiate the character of more distinctly brownish back shown by the Natuna series as a whole. Birds from Borneo are referable to the typical race. So far as known, *Artamus leucoryn. macroterus* is thus confined to the Natuna Islands.

Doctor Abbott says that on Sirhassen Island it frequents thin scrub and open ground and makes use of dead trees as perching places.

A comprehensive review of all the other subspecies of *Artamus leucoryn.* has been published by Dr. Erwin Stresemann.[92]

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[91] Nov. Zool., vol. 20, no. 2, p. 290, June 17, 1913.

[92] Nov. Zool., vol. 20, no. 2, pp. 289-293, June 17, 1913.

TABLE 14.—*Measurements of specimens of* Artamus leucoryn. macroterus

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174708	♂	Sirhassen Island	June 1	W. L. Abbott	203	143	64	20.5	10	20	15.5
174710	♂	do	do	do	-----	142	64.5	20	10.5	18.5	15
174712	♂	do	do	do	197	141.5	63	20.5	10	18.5	15
174713	♂	do.[2]	do	do	200	142.5	65	20.5	10	19	15.5
174714	♂	do	June 9	do	203	141	63	20	11	19	16
174715	♂	Bunguran Island	June 28	do	197	135	61.5	19	10	17	15.5
174716	♂	do	do	do	197	-----	62	20.5	11	17	15
Average of 7 males					199.5	140.8	63.3	20.1	10.2	18.4	15.5
174709	♀	Sirhassen Island	June 1	W. L. Abbott	-----	135.5	61	20.5	10.5	18	15.5
174711	♀	do	do	do	-----	141	64	18	10	18	15
Average of 2 females					-----	138.3	62.5	19.3	10.3	18	15.3

[1] Measured in the flesh by the collector. [2] Type.

Family MUSCICAPIDAE

MUSCITREA GRISOLA SECEDENS (Stresemann)

Pachycephala grisola secedens STRESEMANN, Nov. Zool., vol. 20, no. 2, p. 355, June 17, 1913. ("Sirhassen" [Natuna Islands].)

Since this bird was only briefly characterized by Doctor Stresemann in the original description, it may be worth while to add the following full description, from an adult male, U.S.N.M. No. 174802, taken on Sirhassen Island, June 3, 1900:

Pileum dark hair brown; cervix between hair brown and drab; back, scapulars, and rump rather grayish Prout's brown; upper tail coverts rather rufous olive-brown; tail dark hair brown, the feathers slightly margined basally with olivaceous; wings chaetura drab, the margins of the quills cinnamon brown, the superior wing coverts, except the primary coverts, of the same color as the back; auriculars drab, the remainder of the sides of the head and the sides of the neck and of breast, between hair brown and drab; chin, throat, and breast, smoke gray, pale smoke gray anteriorly, the remainder of lower parts dull white, the sides and flanks slightly washed with grayish and with obscure darker grayish streaks; lining of wing white with small irregular spots of pale brownish exteriorly, these spots more evident on the posterior portions.

This seems to be a readily recognizable race, differing appreciably from all the other forms of the species. Birds from Borneo, however, are very little different from Natuna Islands specimens, too little, it seems to us, for subspecific separation.

Doctor Abbott collected the following 9 examples in the Natuna Islands:

Adult male, U.S.N.M. No. 174802, Sirhassen Island, June 3, 1900. "Iris dull red; bill black; feet leaden blue; soles yellowish."

Adult male, U.S.N.M. No. 174807, Pulo Subi, June 13, 1900.

Adult male, U.S.N.M. No. 174808, Pulo Seraia, May 29, 1900. "Iris dark red; bill black; feet leaden blue; soles yellowish."

Adult female, U.S.N.M. No. 174801, Sirhassen Island, June 1, 1900. "Bill black; feet leaden blue; soles yellowish."

Adult female, U.S.N.M. No. 174804, Sirhassen Island, June 1, 1900.

Adult female, U.S.N.M. No. 174803, Sirhassen Island, June 3, 1900. "Iris dark brownish red; bill black."

Adult female, U.S.N.M. No. 174806, Pulo Subi, June 12, 1900.

Adult female, U.S.N.M. No. 174809, Pulo Seraia, May 29, 1900. "Bill black; feet leaden blue; soles yellowish."

Adult female, U.S.N.M. No. 174805, Brian Island, near Sirhassen Island, May 31, 1900. "Iris dark brown; bill black; feet leaden; soles yellowish."

In three of these specimens, No. 174809, taken on May 29, and Nos. 174801 and 174804, taken on June 1, molt of both quills and contour feathers is already in process, but in the other 6 individuals it seems not yet to have begun.

Measurements are given in Table 15.

There is considerable individual variation in the color of both pileum and back in the birds of this series; in some the color of these parts, one or the other, or both, is more grayish, in others more brownish or rufescent, this difference amounting practically to two color phases.

TABLE 15.—*Measurements of specimens of* Muscitrea grisola secedens

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174808	♂	Pulo Seraia	May 29	W.L. Abbott	171	86	68	14.5	6.5	20	13
174802	♂	Sirhassen Island	June 3	do	178	84.5	66.5	14.5	6.5	18.5	13
174807	♂	Pulo Subi	June 13	do	168	85	66.5	14	6.5	19	12
174809	♀	Pulo Seraia	May 29	do		83	65	14	6.5	19.5	12
174805	♀	Brian Island	May 31	do	165	81	64.5	14	6.5	19	13
174801	♀	Sirhassen Island	June 1	do	165	81	63	13	6	18.5	12
174804	♀	do	do	do	165	83.5	66.5	15	6.5	18	12.5
174803	♀	do	June 3	do	171	85	67	15.5	7	19	11.5
174806	♀	Pulo Subi	June 12	do	165	82.5	64	14	6	18	12

[1] Measured in the flesh by the collector.

PHILENTOMA PYRRHOPTERA DUBIA Hartert

Philentoma dubium HARTERT, Nov. Zool., vol. 1, no. 2, p. 447, Apr. 16, 1894. ("Bunguran" [Island, Natuna Islands].)

This race is apparently confined to the Natuna Islands. Doctor Abbott collected two specimens:

Adult male, U.S.N.M. No. 174826, Bunguran Island, July 3, 1900. "Iris red; bill black; toes leaden blue; tarsi greenish."

Adult male, U.S.N.M. No. 174827, Bunguran Island, July 16, 1900. "Iris red; bill black; toes leaden blue; tarsi tinged with green." Length in flesh, 171 mm.

Both these specimens are in process of molt of quills and contour feathers.

The characters assigned by Doctor Hartert [93] for the separation of this form from *Philentoma pyrrhoptera*—smaller size and less ochraceous posterior lower parts—are borne out by these specimens; but as the differences are not constant the present form must stand as a subspecies.

The generic name *Philentoma*, although consistently used as a neuter noun, apparently must be either masculine or feminine, since its terminal root though a neuter noun is an appelative, and therefore according to the rule must be masculine or feminine. It seems better to treat *Philentoma*, on account of its ending, as feminine rather than masculine.

*RHINOMYIAS UMBRATILIS UMBRATILIS (Strickland)

Trichostoma umbratile STRICKLAND, Contributions to ornithology, pp. 126–127, pl. 35, fig. [2], Nov., 1849. ("Borneo.")

Alcippe pectoralis SALVADORI, Atti R. Acad. Sci. Torino, vol. 3, p. 530, Apr., 1868. (Borneo.).

Doctor Hartert has recorded [94] this species from Bunguran Island under the name *Rhinomyias pectoralis*.[95]

*ARIZELOMYIA LATIROSTRIS LATIROSTRIS (Raffles)

Muscicapa latirostris RAFFLES, Trans. Linn. Soc. London, vol. 13, pt. 2, p. 312, Nov. or Dec., 1822. ("Sumatra.")

This species has been recorded by Doctor Hartert [96] from both Bunguran and Sirhassen Islands, from specimens taken in September and October, 1893.

For the use of the generic name *Arizelomyia*, consult the discussion of the relationships of this species by the present author.[97] The present species is without much doubt entitled to generic separation from *Alseonax*.

HYPOTHYMIS AZUREA GIGANTOPTERA Oberholser

Hypothymis azurea gigantoptera OBERHOLSER, Proc. U. S. Nat. Mus., vol. 39, p. 600, Feb. 25, 1911. ("Bunguran Island, Natuna Islands.")

This endemic subspecies is interesting as being in color more like *Hypothymis azurea prophata* of the Malay Peninsula than like

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[93] Nov. Zool., vol. 1, no. 2, pp. 477–478, Apr. 16, 1894.

[94] Nov. Zool., vol. 2, no. 3, p. 471, Aug. 17, 1895.

[95] For the change of the name of this species from *Rhinomyias pectoralis* to *Rhinomyias umbratilis*, see Stone, Proc. Acad. Nat. Sci. Philadelphia, for 1902, p. 686, Jan. 20, 1903.

[96] Nov. Zool., vol. 1, no. 2, p. 479, Apr. 16, 1894.

[97] Proc. U. S. Nat. Mus., vol. 28, pp. 910, 911, July 8, 1905.

Hypothymis azurea opisthocyanea of the intervening Anamba Islands, though differing, of course, from the former in larger size.

Three specimens are in Doctor Abbott's collection, as follows:

Adult male (type), U.S.N.M. No. 174828; Bunguran Island, July 12, 1900.

Juvenal male, U.S.N.M. No. 174829; Sirhassen Island, June 3, 1900.

Juvenal [male], U.S.N.M. No. 174830; Pulo Lingung, near Bunguran Island, June 17, 1900. Length in flesh, 165 mm.

The juvenal birds are in molt and present a curiously mottled appearance, with patches of blue among the brown feathers of the upper parts and in the gray of the anterior lower surface. In color all three examples are not distinguishable from *Hypothymis azurea prophata* of Borneo and Sumatra, showing thus no approach to *Hypothymis azurea opisthocyanea*, the form with bluish posterior lower parts occurring on the Anamba Islands.

Measurements are given in Table 16.

TABLE 16.—*Measurements of specimens of* Hypothymis azurea gigantoptera

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length[1]	Wing	Tail	Exposed culmen	Tarsus
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174828	♂	Bunguran Island [2]	July 12	W. L. Abbott	168	74.5	73	11.5	17
174829	♂ juv.	Sirhassen Island	June 3	do	168	73.5	74	12	16.5

[1] Measured in the flesh by the collector. [2] Type.

CULICICAPA CEYLONENSIS EOPHILA, new subspecies

Subspecific characters.—Resembling *Culicicapa ceylonensis antioxantha*, from Lower Siam, but with throat paler; yellow of posterior lower parts lighter, less washed with olivaceous, particularly on the breast, the crissum decidedly less golden, the abdomen somewhat so; and upper surface somewhat darker, less golden (more greenish).

Description.—Type, adult male, U.S.N.M. No. 174834; Gunong Ranay, Bunguran Island, Natuna Islands, July 2, 1900; Dr. W. L. Abbott. Pileum fuscous-black edged with deep neutral gray; cervix deep neutral gray; remaining upper parts warbler green verging slightly toward citrine, the rump paler; tail dark hair brown edged with orange citrine; wings dark hair brown, edgings of the tertials and of the inner secondaries, together with the tips of the greater wing coverts, rather dark pyrite yellow, the other wing coverts like the back; sides of head and of neck rather brownish deep neutral gray; the subocular region somewhat darker; middle of throat and of jugulum, between pale mouse gray and smoke gray, shading laterally into the color of the sides of the neck; posterior lower parts rather dull lemon chrome, shading on the breast and sides to warbler green;

axillars wax yellow; rest of lining of wing dull brownish white, the edges of the wings fuscous overlaid with wax yellow.

This new race seems to be readily distinguishable from *Culicicapa ceylonensis ceylonensis* and from the other recognizable forms of the species. Although our series from Borneo is not entirely satisfactory, the birds from that island seem to belong also to the Natuna Islands subspecies. There is apparently no material sexual difference.

The five specimens collected by Doctor Abbott are listed below:

Adult male (type), U.S.N.M. No. 174834; Gunong Ranay, Bunguran Island, July 2, 1900.

Adult male, U.S.N.M. No. 174835; Bunguran Island, July 2, 1900.

Adult male, U.S.N.M. No. 174831; Bunguran Island, July 4, 1900. "Bill black above, pale fleshy brown beneath; tarsi fleshy brown; toes brownish orange."

Adult female, U.S.N.M. No. 174832; Bunguran Island, July 18, 1900.

Adult female, U.S.N.M. No. 174833; Bunguran Island, July 2, 1900.

There is some individual variation in the color of the pileum in these examples, this part varying from dark mouse gray to blackish. There are indications of molt among the contour feathers of all, and among the wing quills of two—Nos. 174833 and 174835.

Doctor Abbott found this flycatcher in the heavy forest on Bunguran Island. Doctor Hartert has recorded it [98] from Pulo Panjang.

Measurements of the Natuna Islands specimens collected by Doctor Abbott are given in Table 17.

TABLE 17.—*Measurements of specimens of* Culicicapa ceylonensis cophila

U.S. N.M. No.	Sex	Locality	Date	Collector	Total length[1]	Wing	Tail	Exposed culmen	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174834	♂	Bunguran Island[2]	July 2	W. L. Abbott	130	63	50.5	9	13.5	7
174835	♂	do	do	do	133	61	51	9.2	13	6.5
174831	♂	do	July 4	do	124	55.5	45.5	8.8	12.8	6.8
Average of 3 males					129	59.8	49	9	13.1	6.8
174833	♀	Bunguran Island	July 2	W. L. Abbott	-------	61	49	9.2	13	7
174832	♀	do	July 18	do	118	56.5	46	8	12.5	7
Average of 2 females					118	58.8	47.5	8.6	12.8	7

[1] Measured in the flesh by the collector. [2] Type.

Including the race above described there are now at least 10 recognizable subspecies of *Culicicapa ceylonensis*, as follows:

[98] Nov. Zool., vol. 2, no. 3, p. 471, Aug. 17, 1895.

1. *Culicicapa ceylonensis ceylonensis* Swainson.

Platyrhynchus ceylonensis Swainson, Zoological illustrations, ser. 1, vol. 1, text to plate 13, p. [1], 1820–21. ("Ceylon.")

Geographic distribution.—Ceylon and all of India, north to central India and the northwestern provinces, and northeast to Calcutta.

2. *Culicicapa ceylonensis calochrysea* Oberholser.

Culicicapa ceylonensis calochrysea Oberholser, Smithsonian Misc. Coll., vol. 76, no. 6, p. 8, July 16, 1923. ("Quaymos, Choung, Thoungyin River, Tenasserim.")

Geographic distribution.—Northern Tenasserim, northwest to Nepal, and north through Burma to Assam.

3. *Culicicapa ceylonensis orientalis* Baker.

Culicicapa ceylonensis orientalis Baker, Bull. Brit. Orn. Club, vol. 44, no. 281, p. 11, Nov. 5, 1923. ("Szechuan, West China.")

Geographic distribution.—South and central western China, and Yunnan, south to the Shan States, northern Siam, and northern Indo-China.

4. *Culicicapa ceylonensis antioxantha* Oberholser.

Culicicapa ceylonenis antioxantha Oberholser, Smithsonian Misc. Coll., vol. 76, no. 6, p. 9, July 16, 1923. ("Khaw Sai Dow, Trang, Lower [Peninsular] Siam.")

Culicicapa ceylonensis meridionalis Baker, Bull. Brit. Orn. Club, vol. 44, no. 281, p. 12, Nov. 5, 1923. ("Keo Tung Song, Siam.")

Geographic distribution.—Southern Indo-China, southern Siam, southern Tenasserim, and the Malay Peninsula.

5. *Culicicapa ceylonensis percnocara* Oberholser.

Culicicapa ceylonensis percnocara Oberholser, Smithsonian Misc. Coll., vol. 60, no 7, p. 12, Oct. 26, 1912. ("Simalur Island.")

Geographic distribution.—Simalur Island, Barussan Islands, western Sumatra.

6. *Culicicapa ceylonensis pellonota* Oberholser.

Culicicapa ceylonensis pellonota Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 12, Oct. 26, 1912. ("Samasama, Nias Island.")

Geographic distribution.—Nias Island, Barussan Islands, western Sumatra.

7. *Culicicapa ceylonensis amphiala* Oberholser.

Culicicapa ceylonensis amphiala Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 12, Oct. 26, 1912. ("North Pagi Island.")

Geographic distribution.—Pagi Islands, Barussan Islands, western Sumatra.

8. *Culicicapa ceylonensis eophila* Oberholser.

Culicicapa ceylonensis eophila Oberholser, antea, p. 58.

Geographic distribution.—Natuna Islands and Borneo.

9. *Culicicapa ceylonensis pellopira* Oberholser.

Culicicapa ceylonensis pellopira Oberholser, Smithsonian Misc. Coll., vol. 76, no. 6, p. 9, July 16, 1923. ("Tjibodas, Mt. Gédé, 4,500 feet altitude, Java.")

Geographic distribution.—Java.

10. *Culicicapa ceylonensis sejuncta* Hartert.

Culicicapa ceylonensis sejuncta Hartert, Nov. Zool., vol. 4, no. 3, p. 526, Dec. 3, 1897. ("South Flores.")

Geographic distribution.—Island of Flores.

Family TIMELIIDAE

*EUPETES MACROCERUS MACROCERUS Temminck [98a]

Eupetes macrocerus Temminck, Nouveau recueil de planches coloriées d'oiseaux, vol. 2, livr. 87, texte to pl. 516, p. [1], Jan. 22, 1831. ("Paddang, dans l'île de Sumatra.")

Reported from Bunguran Island, October 1, 1893, by Doctor Hartert.[99]

ANUROPSIS MALACCENSIS MALACCENSIS (Hartlaub)

Brachypteryx malaccensis Hartlaub, Rev. Zool., vol. 7, p. 402, Nov., 1844. ("Malacca.")

Six examples were obtained by Doctor Abbott:

Adult male, U.S.N.M. No. 174761; Bunguran Island, June 23, 1900. Length in flesh, 140 mm.

Adult male, U.S.N.M. No. 174763; Bunguran Island, July 2, 1900. Length in flesh, 140 mm. "In dense jungle on Gunong Ranay."

Adult male, U.S.N.M. No. 174766; Bunguran Island, July 26, 1900.

Adult male, U.S.N.M. No. 174764; Bunguran Island, July 16, 1900. Length in flesh, 143 mm.

Adult female, U.S.N.M. No. 174762; Bunguran Island, June 25, 1900. Length in flesh, 143 mm.

Adult female, U.S.N.M. No. 174765; Bunguran Island, July 16, 1900. Length in flesh, 143 mm.

Three of these (Nos. 174762, 174764, and 174765) show indications of molt among the contour feathers, and No. 174765 also in the wing quills. The first two listed (Nos. 174761 and 174763) are in worn summer plumage still without evidence of molt. Like birds of this species from the Anamba Islands these from the Natuna Islands appear to average slightly darker than specimens of the typical race from the southern part of the Malay Peninsula, but there is not enough tangible and constant difference in the present series to warrant any subspecific separation, so that for the time being at least we refer

[98a] The original spelling of the specific name of this species is as here given.

[99] Nov. Zool., vol. 1, no. 2, p. 473, Apr. 16, 1894.

them to *Anuropsis malaccensis malaccensis*. Measurements are given in Table 18.

Doctor Abbott says that he found this bird on Bunguran Island chiefly in pairs in the dense jungle, and remaining close to the ground.

TABLE 18.—*Measurements of specimens of* Anuropsis malaccensis malaccensis

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Tarsus
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174764	♂	Bunguran Island	July 16	W. L. Abbott	143	63	35	16	30
174761	♂	do	June 23	do	140	66.5	33	15	29
174763	♂	do	July 2	do	140	66	32.5	15	29
Average of 3 males					141	65.2	33.5	15.3	29.3
174765	♀	Bunguran Island	July 16	W. L. Abbott	136	61	31	14.5	28
174762	♀	do	June 25	do	136	63	28.5	15	26.5
Average of 2 females					136	62	29.8	14.8	27.3

[1] Measured in the flesh by the collector.

The 8 recognizable races of *Anuropsis malaccensis* are as follows:

1. *Anuropsis malaccensis malaccensis* (Hartlaub).

Brachypteryx malaccensis HARTLAUB, Rev. Zool., vol. 7, p. 402, Nov., 1844. ("Malacca.")

Geographic distribution.—Southern Malay Peninsula, north at least to Pahang, and to the Anamba Islands; east to the Natuna Islands; and south to Singapore and Linga Islands.

2. *Anuropsis malaccensis driophila* Oberholser.

Anuropsis malaccensis driophila OBERHOLSER, Smithsonian Misc. Coll., vol. 74, no. 2, p. 9, Sept. 27, 1922. ("Khaw Sai Dow, Trang, Lower Siam.")

Geographic distribution.—Lower (Peninsular) Siam.

3. *Anuropsis malaccensis drymodrama* Oberholser.

Anuropsis malaccensis drymodrama OBERHOLSER, Smithsonian Misc. Coll., vol. 74, no. 2, p. 9, Sept. 27, 1922. ("Sungei Mandau, eastern Sumatra.")

Geographic distribution.—Sumatra.

4. *Anuropsis malaccensis nesitis* Oberholser.

Anuropsis malaccensis nesitis OBERHOLSER, Smithsonian Misc. Coll., vol. 60, no. 7, p. 8, Oct. 26, 1912. ("Tana Masa Island, Batu Islands.")

Geographic distribution.—Batu Islands, Barussan Islands, western Sumatra.

5. *Anuropsis malaccensis exsanguis* Oberholser.

Anuropsis malaccensis exsanguis OBERHOLSER, Smithsonian Misc. Coll., vol. 60, no. 7, p. 8, Oct. 26, 1912. ("Pulo Tuanku, Banjak Islands.")

Geographic distribution.—Banjak Islands, Barussan Islands, western Sumatra.

6. *Anuropsis malaccensis docima* Oberholser.

Anuropsis malaccensis docima Oberholser, Smithsonian Misc. Coll., vol. 74, no. 2, p. 10, Sept. 27, 1922. ("Tanjong Tedong, Banka Island" [southeastern Sumatra].)

Geographic distribution.—Island of Banka, off southeastern Sumatra.

7. *Anuropsis malaccensis poliogenis* (Strickland).

Brachypteryx poliogenis Strickland, Contributions to ornithology, no. 5, p. 93, 1849. ("Borneo.")

Myiothera poliogenys Strickland, Contributions to ornithology, no. 5, p. 93 (in text), 1849 (Boie MS.). ("Borneo.")

Anuropsis malaccensis sordidus Chasen and Kloss, Journ. f. Orn., Ergänzungsband 2, p. 119, Oct. 29, 1929. ("Bettotan near Sandakan, British North Borneo.")

In this connection the type of *Brachypteryx poliogenis* Strickland, which is in the collection of the Academy of Natural Sciences of Philadelphia, has been examined and found to belong to this Bornean race, for which this name should therefore be used.

Geographic distribution.—Central, northern, and eastern Borneo.

8. *Anuropsis malaccensis saturata* Chasen and Kloss.

Anuropsis malaccensis saturata Robinson and Kloss, Bull. Brit. Orn. Club, vol. 40, no. 247, p. 68, Jan. 30, 1920. ("Tinjar River, Boram District, N. Sarawak, 500 feet.")

Geographic distribution.—Western Borneo.

ALCIPPORNIS BRUNNEICAUDA EPIPOLIA, new subspecies

Subspecific characters.—Allied to *Alcippornis brunneicauda brunneicauda* Salvadori (*Alcippe cinerea* Auct.), but upper parts brighter, the back, scapulars, and rump lighter and decidedly more rufescent or ochraceous (less grayish); lower surface averaging somewhat paler, more purely whitish.

Description.—Type, adult male, U.S.N.M. No. 174810, Bunguran Island, Natuna Islands, July 18, 1900; Dr. W. L. Abbott. Pileum between benzo brown and hair brown; cervix between hair brown and mouse gray; back, scapulars, and rump rather reddish Saccardo's umber; upper tail coverts Brussels brown; tail brown, terminally between mummy brown and Prout's brown, shading proximally to Prout's brown, and the feathers margined externally with argus brown; wings between olive-brown and clove brown, the exposed edges of tertials and of wing coverts like the back, those of the inner primaries and the outer secondaries similar, but more reddish, the inner edges of the primaries dull brownish white; sides of head and of neck like the cervix, but somewhat paler; lower parts dull white, the breast and jugulum faintly mottled with pale drab and tilleul buff; sides and flanks tinged with brownish, between pale wood brown and drab, crissum lightly washed with the same; lining of wing dull brownish white; "Iris brownish gray; bill dark horn brown becoming pale fleshy beneath at base; feet brownish leaden."

The present new subspecies from the Natuna Islands may readily be distinguished from *Alcippornis brunneicauda eriphaea* Oberholser,[1] of Borneo by its more grayish (less brownish) head, paler, less rufescent (more ochraceous) back, and the much paler, less rufescent, more grayish or more purely whitish lower surface.

As in all races of this species there is some individual variation in the color of the upper parts posterior to the cervix, this area being in some specimens noticeably more grayish.

The 8 specimens obtained by Doctor Abbott are listed below:

Adult male, U.S.N.M. No. 174811, Bunguran Island, July 6, 1900. "Iris pale brownish gray."

Adult male (type), U.S.N.M. No. 174810, Bunguran Island, July 18, 1900. "Irish brownish gray; bill dark horn brown, becoming pale fleshy beneath at base; feet brownish leaden."

Adult male, U.S.N.M. No. 174812, Bunguran Island, July 18, 1900. "Iris bluish gray; feet pale brownish leaden."

Adult male, U.S.N.M. No. 174813, Bunguran Island, July 18, 1900. "Bill dark horn brown above, pale brown beneath, a yellow line along commissure. Inside of mouth and gape yellow; feet leaden."

Adult male, U.S.N.M. No. 174814, Bunguran Island, July 20, 1900. "Iris bluish gray; bill leaden above and at tip beneath, pale fleshy at base beneath; angles of mouth yellow; feet pale lavender, soles yellow."

Adult female, U.S.N.M. No. 174816, Bunguran Island, July 26, 1900.

Adult female (?), U.S.N.M. No. 174815, Bunguran Island, July 20, 1900. "Iris bluish gray; feet pale leaden."

First autumn female, U.S.N.M. No. 174817, Bunguran Island, July 5, 1900. "Iris bluish gray; upper mandible dark horn brown; lower mandible brownish yellow; feet pale leaden."

All these examples except one are in process of molting both quills and contour feathers. This exception, No. 174816, taken on July 26, seems to have completed the change of wing quills and tail feathers, though showing still a very few remnants of molt among the contour feathers.

One of the females (No. 174817, taken on July 5) is in process of molt from the juvenal to the first autumn plumage, and has acquired enough of the latter to indicate that on the posterior upper parts the color is even more rufescent than in the fully adult bird. Otherwise the colors appear not to differ from those of the old adult.

Measurements are given in Table 19.

Doctor Abbott found this species in the dense forest on Bunguran Island.

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[1] Smithsonian Misc. Coll. vol. 74, no. 2, p. 2, Sept. 27, 1912.

TABLE 19.—*Measurements of specimens of* Alcippornis brunneicauda epipolia

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174811	♂	Bunguran Island	July 6	W. L. Abbott	146	68.5	54.5	11	5.5	21.5	12
174810	♂	do.[2]	July 18	do	152	75	59.5	11.5	5.5	21	11
174812	♂	do	do	do	149	70	55.5	12	5.5	21	11.5
174813	♂	do	do	do	146		56	11	5.5	20.5	10.5
174814	♂	do	July 20	do	152	71.5	59	11	5	21	11
Average of 5 males					149	71.3	56.9	11.3	5.4	21	11.2
174817	♀	Bunguran Island	July 5	W. L. Abbott	152	67.5	57	12.5	5	21	12
174816	♀	do	July 26	do	146	68.5	56.5	12	5	19.5	11.5
174815	♀	do	July 20	do	149	67	57	11.5	5	20.5	11
Average of 3 females					149	67.7	56.8	12	5	20.3	11.5

[1] Measured in the flesh by the collector. [2] Type.

The change of the generic name *Alcippe* to *Alcippornis* is fully explained by the present writer in a previous article,[2] but has been objected to by Robinson and Kloss,[3] on the ground that the first subsequent type designation of *Alcippe* (Gray, 1846[4]) is invalid because he selected a species (*Trichastoma affine* Blyth) that does not agree with the original diagnosis, although definitely included in the genus when proposed. This seems, however, not to be a tenable objection, since the International Code of Nomenclature provides that subsequent designation of a type shall be regardless of other considerations than that the species selected shall be one of the original and definitely included species. We therefore apparently can continue the use of the name *Alcippornis* for this genus. With this view I understand that Mr. Kloss is now in accord.

Likewise the discontinuance of the specific name (*Alcippe*) *cinerea* for this species has been called in question, on the ground that a mistaken identification of a species, resulting in a new combination of generic and specific terms, is a new and valid designation for the species so misidentified. This is, however, not in accord with current usage. There may, however, be some doubt concerning the identity of *Hyloterpe brunneicauda* Salvadori,[5] which we have used for this species in place of *Alcippe cinerea*, but the original description indicates very strongly that this is the correct identification. The brownish olivaceous back, grayish head, brown tail, fuscous bill, and wing length of 72 mm. all agree with *Alcippe cinerea*, and Salvadori remarks (l. c.) that his bird is similar to *Hyloterpe philomela* (= *Muscitrea grisola*) but is smaller and has the tail more rufescent. In view of this it seems better to continue this name for the species at least

[2] Smithsonian Misc. Coll., vol. 74, no. 2, pp. 1, 2, Sept. 27, 1922.
[3] Journ. Federated Malay States Mus., vol. 13, pt. 4, pp. 2, 3, Aug., 1927.
[4] The genera of birds, vol. 1, p. 209, Dec., 1846.
[5] Ann. Mus. Civ. Stor. Nat. Genova, ser. 1, vol. 14, p. 210, Apr. 22, 1879. (Ajer Mantcior, western Sumatra.)

until examination of the type of *Hyloterpe brunneicauda* Salvadori shall prove it to belong to some other species. Should this name, however, ultimately prove unavailable, we can fall back on the substitute name *Napothera phaionota* published by Sharpe.[6]

There appear to be now 4 recognizable races of *Alcippornis brunneicauda*, as follows:

1. *Alcippornis brunneicauda brunneicauda* (Salvadori).

Hyloterpe brunneicauda Salvadori, Ann. Mus. Civ. Stor. Nat. Genova, ser. 1, vol. 14, p. 210, Apr. 22, 1879. ("Ajer Mantcior" [western Sumatra].)

Napothera phaionota Sharpe, Notes Leyden Mus., vol. 6, p. 178, July, 1884 (Kuhl MS.). (Synonym of *Alcippe cinerea* Blyth.)

Geographic distribution.—Malay Peninsula to Sumatra.

2. *Alcippornis brunneicauda hypocneca* (Oberholser).

Alcippe cinerea hypocneca Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 8, Oct. 26, 1912. ("Pulo Pinie, Batu Islands.")

Geographic distribution.—Batu Islands, Barussan Chain, western Sumatra.

3. *Alcippornis brunneicauda eriphaea* Oberholser.

Alcippornis brunneicauda eriphaea Oberholser, Smithsonian Misc. Coll., vol. 74, no. 2, p. 2, Sept. 27, 1912. ("Liang Koeboeng (Grot), Borneo.")

Geographic distribution.—Borneo.

4. *Alcippornis brunneicauda epipolia* Oberholser.

Alcippornis brunneicauda epipolia Oberholser, antea, p. 63.

Geographic distribution.—Natuna Islands.

*DRYMOCATAPHUS NIGROCAPITATUS NIGROCAPITATUS (Eyton)

Brachypteryx nigrocapitata Eyton, Proc. Zool. Soc. London, vol. 7, p. 103, Nov., 1839. ("Malaya" [= Malay Peninsula].)

Recorded by Hartert [7] from Bunguran Island.

CYANODERMA ERYTHROPTERA NEOCARA, new subspecies

Subspecific characters.—Similar to *Cyanoderma erythroptera erythroptera*, from Singapore, but posterior lower parts less buffy (more grayish); upper surface more rufescent; and crown distinctly brighter than cervix, forming thus a well-marked crown patch, instead of being uniform with cervix.

Description.—Type, adult male, U.S.N.M. No. 174799, Bunguran Island, Natuna Islands, July 20, 1900; Dr. W. L. Abbott. Forehead between slate color and dark neutral gray; crown between russet and hazel; cervix cinnamon brown verging toward ochraceous-tawny and mixed with neutral gray; back and inner scapulars between russet and cinnamon brown; rump and upper tail coverts like the cervix and shading anteriorly into the color of the back; tail mars brown, most of the inner webs of the feathers between Prout's brown and mummy

[6] Notes Leyden Mus., vol. 6, p. 178, July, 1884 (Kuhl MS.).

[7] Nov. Zool., vol. 1, no. 2, p. 470, Apr. 16, 1894.

brown, the outer edges of the feathers basally of the same color as the edgings of the wing quills; wings dull sepia verging slightly toward fuscous, the inner edges of wing quills basally light buff, shading more distally into light ochraceous-buff; inner scapulars and superior wing coverts burnt sienna verging a little toward Sanford's brown, the tertials and the edges of the primaries and secondaries shading from Sanford's brown toward auburn; sides of head and of neck, including the superciliary region, together with chin, throat, and upper breast, slate gray, verging toward deep neutral gray; remainder of lower parts pale neutral gray, the middle of abdomen paler, the sides, flanks, and middle abdomen washed with dull buffy; lower tail coverts washed with brownish; thighs neutral gray, washed inferiorly with brownish; lining of wing light buff.

This new subspecies from the Natuna Islands is much more closely allied to *Cyanoderma erythroptera erythroptera* from the Malay Peninsula, than to *Cyanoderma erythroptera bicolor* (Blyth) from Borneo. From the latter it differs conspicuously in its strongly rufescent instead of mostly gray or slate-colored crown and cervix; in less brightly ferruginous back; in much paler anterior lower parts, and paler, less buffy posterior lower surface. Thus far it is known from only the Natuna Islands.

TABLE 20.—*Measurements of specimens of* Cyanoderma erythroptera neocara

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174797	♂	Bunguran Island	July 1	W.L. Abbott	133	59	46	14.5	6.5	18	12.5
174799	♂	do.[2]	July 20	do	136	58.5	48	13	6	18.5	12
Average of 2 males					134.5	58.8	47	13.8	6.3	18.3	12.3
174798	♀	Bunguran Island	July 5	W.L. Abbott	127	56.5	45	13	5	18	11
174800	♀	do	July 27	do	-----	57	-----	13	5.5	18.5	11.5
Average of 2 females					127	56.8	45	13	5.3	18.3	11.3

[1] Measured in the flesh by the collector. [2] Type.

Four specimens are in Doctor Abbott's collection:

Adult male, U.S.N.M. No. 174797, Bunguran Island, July 1, 1900. "Naked skin about eye dark blue; naked skin on side of neck pale blue; bill leaden blue, blackish above."

Adult male (type), U.S.N.M. No. 174799, Bunguran Island, July 20, 1900.

Adult female, U.S.N.M. No. 174798, Bunguran Island, July 5, 1900.

Adult female, U.S.N.M. No. 174800, Bunguran Island, July 27, 1900.

All these are in nearly completed molt of both quills and contour feathers. There is little individual variation among them, what there is consisting chiefly in the shade of crown and anterior lower parts.

Measurements in detail are as given in Table 20.

MIXORNIS RUBICAPILLA EVERETTI Hartert

Mixornis everetti HARTERT, Nov. Zool., vol. 1, no. 2, p. 472, Apr. 16, 1894. ("Bunguran.")

Only two specimens of this subspecies, which is apparently confined to the island of Bunguran, were obtained by Doctor Abbott. These are:

Adult male, U.S.N.M. No. 153956, Bunguran Island, September 30, 1893.

Juvenal, sex unknown, U.S.N.M. No. 174784, Bunguran Island, July 15, 1900. Length in flesh, 133 mm.

The juvenal shows evidences of molt among the contour feathers but not in the quills.

These birds bear out the characters ascribed to *Mixornis everetti* by its original describer; but this Natuna form is clearly a subspecies of *Mixornis rubicapilla*, being connected by individual variation. The juvenal plumage is paler and less rufescent above than the adult.

Measurements are given in Table 21.

TABLE 21.—*Measurements of specimens of* Mixornis rubicapilla everetti

U.S. N.M. No.	Sex	Locality	Date	Collector	Total length[1]	Wing	Tail	Exposed culmen	Tarsus
					Mm.	*Mm.*	*Mm.*	*Mm.*	*Mm.*
153956	♂	Bunguran Island	Sept. 30, 1893	A. Everett	--------	60	52	13	19.5
174784	juv.	do	July 15, 1900	W.L. Abbott	133	54.5	51	11.5	19

[1] Measured in the flesh by the collector.

MIXORNIS RUBICAPILLA ZAPERISSA, new subspecies

Subspecific characters.—Similar to *Mixornis rubicapilla everetti* from Bunguran Island, but with throat, jugulum, and middle of abdomen more deeply and clearly yellow (less tinged with grayish), and with much narrower dusky streaks on anterior lower parts; the upper surface is also somewhat lighter.

Description.—Type, adult male, U.S.N.M. No. 174795, Pulo Lingung, Natuna Islands, June 14, 1900; Dr. W. L. Abbott. Crown and forehead, with anterior part of sides of neck, between chestnut and auburn, the forehead slightly mixed with dark gray; remainder of upper surface and the posterior part of the sides of the neck, between amber brown and Brussels brown, the upper tail coverts rather lighter; tail at base auburn, but shading toward fuscous terminally and on the inner webs of the outer feathers; wings light fuscous, the margins of quills and upper wing coverts between chestnut and Sanford's brown; lores dusky; a narrow supra-ocular stripe dull pale yellow mixed with grayish; ear coverts grayish washed with chestnut; lower surface deep straw yellow, slightly shaded with gray on the breast, and much so with pale gray on sides and flanks, the throat and jugulum narrowly streaked with brownish black; crissum

deep olive buff; lining of wing straw yellow; "naked orbital skin blue;" "feet pale greenish."

It is a little surprising to find that the small islands near Bunguran Island are inhabited by a race of this species different from *Mixornis rubicapilla ereretti*, which apparently is confined to the latter area. This new race differs from *Mixornis rubicapilla zophera* of the Anamba Islands in smaller size, darker, more rufescent upper parts, and in narrower streaks on throat and jugulum. It is thus geographically a narrowly streaked race between two broadly streaked forms.

Eleven specimens of this new subspecies were obtained by Doctor Abbott, as follows:

Adult male (type), U.S.N.M. No. 174795, Pulo Lingung, near Bunguran Island, June 14, 1900. "Feet pale greenish; naked orbital skin blue."

Adult male, U.S.N.M. No. 174793, Pulo Lingung, near Bunguran Island, June 14, 1900. "Iris yellowish white; upper mandible dark horn brown; lower mandible leaden." Length in flesh, 146 mm.

Adult male, U.S.N.M. No. 174794, Pulo Lingung, near Bunguran Island, June 17, 1900. Length in flesh, 136 mm.

Adult male, U.S.N.M. No. 174792, Pulo Kombeh, near Bunguran Island, June 19, 1900. "Iris grayish brown." Length in flesh, 133 mm.

Adult male, U.S.N.M. No. 174788, Pulo Laut, August 3, 1900. Length in flesh, 140 mm.

Adult male, U.S.N.M. No. 174791, Pulo Laut, August 13, 1900. Length in flesh, 143 mm.

Adult female, U.S.N.M. No. 174790, Pulo Laut, August 7, 1900. Length in flesh, 136 mm.

Adult female, U.S.N.M. No. 174789, Pulo Laut, August 3, 1900. "Iris pale greenish yellow; naked skin about eyes dull blue; feet dull greenish." Length in flesh, 133 mm.

Adult, sex unknown, U.S.N.M. No. 174787, Pulo Laut, August 3, 1900. Length in flesh, 133 mm.

Adult, sex unknown, U.S.N.M. No. 174786, Pulo Laut, August 3, 1900. Length in flesh, 140 mm.

Juvenal, sex unknown, U.S.N.M. No. 174785, Pulo Laut, August 9, 1900. Length in flesh, 140 mm.

All the adults are more or less in molt, those taken during June showing it only a little and only among the contour feathers, while those obtained in August have both quills and contour feathers heavily involved. The single juvenile, No. 174785, taken on August 9, exhibits evidences of molt among only the contour feathers.

There is in this series considerable individual variation in color on the upper surface, as some specimens are much less rufescent than others. The juvenal plumage is lighter, less rufescent above than that of the adult.

Measurements are given in Table 22.

Doctor Abbott found this bird very common in the thick jungle on Pulo Kombeh, near Bunguran Island, and the commonest bird on Pulo Laut.

TABLE 22.—*Measurements of specimens of* Mixornis rubicapilla zaperissa

U.S. N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Tarsus
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174792	♂	Pulo Kombeh	June 19	W. L. Abbott	133	60	51	13	19
174793	♂	Pulo Lingung	June 14	do	146	58	53	14	19
174795	♂	do.[2]	do	do		59.5	52	14	19.5
174794	♂	do	June 17	do	136	58.5	50	13.5	18
174791	♂	Pulo Laut	Aug. 13	do	143	58	52	13.5	19
174788	♂	do	Aug. 3	do	140	58	51	14	19.5
Average of 6 males					139.6	58.7	51.5	13.7	19
174790	♀	Pulo Laut	Aug. 7	W. L. Abbott	136	60	50.5	13	19
174789	♀	do	Aug. 3	do	133	60	49.5	13.5	19
Average of 2 females					134.5	60	50	13.3	19
174786		Pulo Laut	Aug. 3	W. L. Abbott	140	61	54		19
174787		do	do	do	133	61	52.5	14	18.5
174785	juv.	do	Aug. 9	do	140	57	53	14	19

[1] Measured in the flesh by the collector. [2] Type.

As Robinson has indicated,[8] *Mixornis gularis* is but subspecifically related to *M. rubicapilla*, and therefore all the forms heretofore ranged as subspecies of the former are to be considered races of the bird commonly known by the latter name.

There may be some difference of opinion regarding the tenability of the name *Mixornis rubicapilla* Tickell, since in the original description [9] the specific name is spelled *rubicapilla*, although subsequent authors have spelled it *rubricapilla*, and there is a prior *Motacilla rubricapilla*,[10] to which Dr. Charles W. Richmond has called my attention. Of course, if Tickell's *Motacilla rubicapilla* be considered but a typographical error or some other equivalent of *Motacilla rubricapilla*, the former is preoccupied and can not be continued in use for the Indian bird at present under consideration, which lacking any synonym would have to be rechristened. On the other hand, it seems reasonable to consider the term *rubicapilla* sufficiently different from *rubricapilla*, by reason of other derivation, to warrant its retention in spite of the prior *Motacilla rubricapilla*.

We are therefore using *Mixornis rubicapilla* as the specific name for the present group.

[8] Journ. Federated Malay States Mus., vol. 7, pt. 3, p. 177, Sept., 1917.

[9] *M[otacilla]. rubicapilla* Tickell, Journ. Asiatic Soc. Bengal, vol. 2, no. 23, p. 576, for Nov. (Dec.), 1833. ("Borabhûm and Dholbhûm.")

[10] *Motacilla Rubricapilla* Moser, Allgemeine Praktische Forstnaturgeschichte Deutschlands, vol. 2, p. 258 (in text), 1794.

The 19 recognizable races of this species are as follows:

1. *Mixornis rubicapilla rubicapilla* (Tickell).

M[otacilla]. Rubicapilla Tickell, Journ. Asiatic Soc. Bengal, vol. 2, no. 23, p. 576, for Nov. (Dec.), 1833. ("Borabhúm and Dholbhúm.")

Geographic distribution.—Eastern Bengal, India east to Burma, and south to northern Tenasserim.

2. *Mixornis rubicapilla chloris* (Blyth).

T[imalia]. chloris Blyth, Journ. Asiatic Soc. Bengal, vol. 11, no. 128, p. 794, for Aug. (after Nov. 22), 1842. ("Nepal.")

M[ixornis]. ruficeps Hodgson, Proc. Zool. Soc. London, vol. 13, for 1845, p. 23, Aug., 1845. (Nepal.)

Geographic distribution.—Nepal, east to Assam, and southeast to the northern Shan States.

3. *Mixornis rubicapilla sulphurea* (Rippon).

Stachyridopsis sulphurea Rippon, Bull. Brit. Orn. Club, vol. 11, no. 74, p. 11, Oct. 27, 1900. ("Namehet, S. Shan States.")

Mixornis gularis minor Gyldenstolpe, Kungl. Sven. Vet. Akad. Handl., vol. 56, no. 2, p. 60, Oct. 19, 1916. ("Pak Koh, Northern Siam.")

Geographic distribution.—Northern, central, and eastern Siam, north to the southern Shan States and southern Yunnan, China.

4. *Mixornis rubicapilla lutescens* Delacour.

Mixornis rubricapilla lutescens Delacour, Bull. Brit. Orn. Club, vol. 47, no. 308, p. 18, Nov. 6, 1926. ("Bao-Ha, Tonkin.")

Geographic distribution.—Eastern and northern Tonkin; and central western and northern Annam.

5. *Mixornis rubicapilla kinneari* Delacour and Jabouille.

Mixornis Kinneari Delacour and Jabouille, Arch. d'Hist. Nat., vol. 1, p. 136, 1925. ("Haïlang" [central eastern Annam].)

Geographic distribution.—Central eastern Annam.

6. *Mixornis rubicapilla versuricola* Oberholser.

Mixornis gularis versuricola Oberholser, Smithsonian Misc. Coll., vol. 74, no. 2, p. 5, Sept. 27, 1922. ("Da Bau, southern Annam.")

Geographic distribution.—Southern Annam, and probably also Cochin China and Cambodia.

7. *Mixornis rubicapilla inveterata* Oberholser.

Mixornis gularis inveterata Oberholser, Smithsonian Misc. Coll., vol. 74, no. 2, p. 5, Sept. 27, 1922. ("Koh Kut Island, southeastern Siam.")

Geographic distribution.—Southeastern Siam.

8. *Mixornis rubicapilla connectens* Kloss.

Mixornis rubricapilla connecteus [11] Kloss, Ibis, ser. 10, vol. 6, no. 2, p. 207, Apr. 9, 1918. ("Malay Peninsula, about lat. 10° N.")

[11] This spelling of the subspecific name where it first appears is evidently a typographical error for *connectens*, as the name is given in the latter form in a subsequent paragraph on the same page (loc. cit.).

M[ixornis]. r[ubricapilla]. connectens Kloss, Ibis, ser. 10, vol. 6, no. 2, p. 207, in text, with measurements, Apr. 9, 1918.

Mixornis rubricapilla connectans Delacour and Jabouille, Ibis, ser. 12, vol. 1, no. 1, p. 249, Jan. 3, 1925. ["Laobao district" (central Annam).] (Nomen nudum; errore pro *Mixornis rubricapilla connectens* Kloss.)

Geographic distribution.—Southern Tenasserim, south on the Malay Peninsula to about latitude 9° N., and east to southwestern Siam.

9. *Mixornis rubicapilla archipelagica* Oberholser.

Mixornis gularis archipelagica Oberholser, Smithsonian Misc. Coll., vol. 74, no. 2, p. 4, Sept. 27, 1922. ("Domel Island, Mergui Archipelago.")

Geographic distribution.—Mergui Archipelago.

10. *Mixornis rubicapilla chersonesophila* Oberholser.

Mixornis gularis chersonesophila Oberholser, Smithsonian Misc. Coll., vol. 74, no. 2, p. 3, Sept. 27, 1922. ("Trang, Lower Siam.")

Geographic distribution.—Lower (Peninsular) Siam, from about latitude 9° N., south to about latitude 6° N.

11. *Mixornis rubicapilla pileata* (Blyth).

Prinia pileata Blyth, Journ. Asiatic Soc. Bengal, vol. 11, pt. 1, no. 122, p. 204, Feb. 26, 1842. ("Inhabits also Tenasserim"; type locality given only by inference; but the type specimen came from Malacca. *Cf.* also Robinson, Journ. Federated Malay States, vol. 7, pt. 3, p. 177, Sept., 1917.)

Geographic distribution.—Southern end of Malay Peninsula, north to Trengganu, and south to Singapore and the Rhio Archipelago.

12. *Mixornis rubicapilla gularis* (Horsfield).

Timalia gularis Horsfield, Zoological researches in Java, pt. 3, pl. [42], fig. [2], and text p. [1], Feb., 1822. ("Island of Sumatra.") [12]

M[ixornis]. sumatrana Bonaparte, Conspectus generum avium, vol. 1, pt. 1, June 24, 1850, p. 217. ("Sumatra.")

T[imalia]. similis Blyth, Ibis, new [2d] ser., vol. 1, no. 1, p. 47, Jan., 1865 (Temminck MS.). ("Sumatra.")

Geographic distribution.—Sumatra.

13. *Mixornis rubicapilla zarhabdota* Oberholser.

Mixornis pileata zarhabdota Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 9, Oct. 26, 1912. ("Pulo Bangkaru, Banjak Islands.")

Geographic distribution.—Banjak Islands, Barussan Islands, western Sumatra.

14. *Mixornis rubicapilla zaptera* Oberholser.

Mixornis pileata zaptera Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 9, Oct. 26, 1912. ("Tana Masa Island, Batu Islands.")

Geographic distribution.—Batu Islands, Barussan Islands, western Sumatra.

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[12] The reasons for the reemployment of this name for this subspecies are given by Oberholser, Smithsonian Misc. Coll., vol. 74, no. 2, pp. 5, 6, Sept. 27, 1922.

15. *Mixornis rubicapilla prillwitzi* Hartert.

Mixornis prillwitzi HARTERT, Bull. Brit. Orn. Club, vol. 12, no. 84, p. 32, Dec. 30, 1901. ("Kangean Island, north of Bali, in the Java Sea.")

Geographic distribution.—Kangean Island, Java Sea.

16. *Mixornis rubicapilla everetti* Hartert.

Mixornis everetti HARTERT, Nov. Zool., vol. 1, no. 2, p. 472, Apr. 16, 1894. ("Bunguran.")

Geographic distribution.—Bunguran Island, Natuna Islands.

17. *Mixornis rubicapilla zaperissa* Oberholser.

Mixornis rubicapilla zaperissa OBERHOLSER, antea, p. 68.

Geographic distribution.—Northern part of Natuna Islands (Pulo Laut, Pulo Lingung, Pulo Kombeh, and probably other islands except Bunguran).

18. *Mixornis rubicapilla zophera* Oberholser.

Mixornis pileata zophera OBERHOLSER, U. S. Nat. Mus. Bull. 98, p. 49, June 30, 1917. ("Pulo Telaga, Anamba Islands.")

Geographic distribution.—Anamba Islands, South China Sea.

19. *Mixornis rubicapilla woodi* Sharpe.

Mixornis Woodi SHARPE, Trans. Linn. Soc. London, ser. 2, vol. 1, pt. 6, p. 331, Nov., 1877. ("Puerto Princesa, Palawan," "Philippine Archipelago.")

Geographic distribution.—Palawan and Balabac Islands, Philippine Islands.

STACHYRIS NIGRICEPS NATUNENSIS Hartert

Stachyris natunensis HARTERT, Nov. Zool., vol. 1, no. 2, p. 470, Apr. 16, 1894. ("Insula Bunguran.")

Six specimens were obtained by Doctor Abbott, as follows:

Adult male, U.S.N.M. No. 174772, Bunguran Island, July 6, 1900. Length in flesh, 140 mm.

Adult male, U.S.N.M. No. 174771, Bunguran Island, July 20, 1900. Length in flesh, 133 mm. "Iris pale brownish yellow, tinged with pink; feet greenish leaden; bill blackish leaden."

Adult male, U.S.N.M. No. 174770, Bunguran Island, July 20, 1900. Length in flesh, 133 mm. "Feet greenish leaden; bill blackish; iris pale brownish yellow."

Adult male, U.S.N.M. No. 174769, Bunguran Island, July 21, 1900. Length in flesh, 143 mm. "Feet pale green; bill blackish horny."

Juvenal male, U.S.N.M. No. 174767, Bunguran Island, July 21, 1900. Length in flesh, 140 mm.

Juvenal female?, U.S.N.M. No. 174768, Bunguran Island, July 26, 1900. Length in flesh, 143 mm.

These additional examples bear out the distinguishing characters assigned by Doctor Hartert to this race, although there is considerable individual variation in the richness and depth of the color of the under surface. All are in process of molt, this in most of them involving both quills and contour feathers. The two in juvenal plumage differ

in coloration little from adults, though they are somewhat darker above, with more rufescent edgings on the wing-quills and coverts.

Measurements are given in Table 23.

Doctor Abbott found this species common in the dense jungle on Bunguran Island. It frequented the thick undergrowth of dense forest.

TABLE 23.—*Measurements of specimens of* Stachyris nigriceps natunensis

U.S.N.M. No.	Sex.	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174772	♂	Bunguran Island	July 6	W.L. Abbott	140	62.	48.5	15	6.5	21.5	13.5
174770	♂	do	July 20	do	133	61.5	49	13	6	22	14
174771	♂	do	do	do	133	62.5	48	13.5	6	21	13.5
174767	♂	do	July 21	do	140	58	42.5	15.5	5.5	21.5	13
174769	♂	do	do	do	143	61.5	48.5	14.5	6	21.5	13
Average of 4 males					137.8	61.1	47.3	14.3	6	21.5	13.4
174768	♀(juv?)	Bunguran Island	July 26	W. L. Abbott	143	59	49	14	6	21	13

[1] Measured in the flesh by the collector.

*ALCIPPE MAGNA (Eyton)

Malacopteron magnum EYTON, Proc. Zool. Soc. London, vol. 7, p. 103, Nov., 1839. ("Malaya"; type from Sumatra, *fide* Sharpe, Catalogue of birds in the British Museum, vol. 7, p. 565, 1883.)

A single female from Mount Ranay, Bunguran Island, was recorded by Doctor Hartert,[13] under the name *Malacopterum magnum*. The use of the generic name *Alcippe* has already been explained.[14]

ALCIPPE CINEREA BUNGURENSIS (Hartert)

Malacopterum cinereum bungurense HARTERT, Nov. Zool., vol. 1, no. 2, p. 470, Apr. 16, 1894. ("Bunguran" [Island, Natuna Islands].)

Seven specimens are in Doctor Abbott's collection:

Adult male, U.S.N.M. No. 174777, Bunguran Island, June 27, 1900. Length in flesh, 159 mm.

Adult male, U.S.N.M. No. 174779; Bunguran Island, July 2, 1900. Length in flesh, 162 mm.

Adult male, U.S.N.M. No. 174780; Bunguran Island, July 3, 1900. "Iris brownish gray; feet pale lavender; upper mandible dark horn brown; lower mandible pale fleshy, leaden at tip." Length in flesh, 156 mm.

Adult male, U.S.N.M. No. 174783; Bunguran Island, July 16, 1900. Length in flesh, 159 mm.

Adult female, U.S.N.M. No. 174778, Gunong Ranay, Bunguran Island, July 2, 1900. Length in flesh, 152 mm.

[13] Nov. Zool., vol. 2, no. 3, p. 467, Aug. 17, 1895.

[14] Oberholser, Smithsonian Misc. Coll., vol. 74, no. 2, pp. 1–3, Sept. 27, 1922.

Adult female, U.S.N.M. No. 174781; Bunguran Island, July 3, 1900. "Iris brownish gray; feet pale lavender." Length in flesh, 140 mm.

Adult female, U.S.N.M. No. 174782; Bunguran Island, July 16, 1900. Length in flesh, 152 mm.

All these specimens show evidences of molt in both quills and contour feathers. They bear out the distinctness of the Natuna Islands race from typical *Alcippe cinerea* of the Malay Peninsula. The upper parts are paler, more refuscent, and the occipital black patch is more brownish.

Measurements are given in Table 24.

TABLE 24.—*Measurements of specimens of* Alcippe cinerea bungurensis

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm*
174777	♂	Bunguran Island	June 27	W. L. Abbott	159	75	61	14	5	21.5	12
174779	♂	do	July 2	do	162	73.5	59	14.5	5	20	12.5
174780	♂	do	July 3	do	156	70	50	13.5	5	19.5	11
174783	♂	do	July 16	do	159	76	59.5	14	5	19	12
174778	♀	do	July 2	do	152	68	53.5	13	5	19	11
174781	♀	do	July 3	do	140	67	54	12.5	5	19	11
174782	♀	do	July 16	do	152	69	55.5	12.5	4.5	18	10

[1] Measured in the flesh by the collector.

Family PYCNONOTIDAE

*CHLOROPSIS VIRIDIS ZOSTEROPS Vigors

Chlor[*opsis*]. *zosterops* [VIGORS], *in* Raffles's Memoir of Sir Thomas Stamford Raffles, p. 674, 1830. (No locality given; probably Java or Sumatra.)

This species was reported by Doctor Hartert [15] from Bunguran Island, on the basis of specimens collected by A. Everett.

*CHLOROPSIS ICTEROCEPHALA ICTEROCEPHALA (Lesson)

P[*hyllornis*]. *icterocephalus* LESSON, Rev. Zool., vol. 3, p. 164, June, 1840. ("îles de Sumatra et de Bornéo. Le continent indien"; type locality now designated as Borneo.)

Recorded by Doctor Hartert [16] from Bunguran Island.

AEGITHINA VIRIDISSIMA THAPSINA Oberholser

Aegithina viridissima thapsina OBERHOLSER, U. S. Nat. Mus. Bull. 98, p. 40, June 30, 1917. ("Pulo Siantan, Anamba Islands.")

We have four examples, as listed below:

Adult male, U.S.N.M. No. 174737; Bunguran Island, July 1, 1900. "Feet blue; bill blue, black at tip and along culmen." Length in flesh, 133 mm.

[15] Nov. Zool., vol. 2, no. 3, p. 468, Aug. 17, 1895.
[16] Nov. Zool., vol. 1, no. 2, p. 471, Apr. 16, 1894

Adult male, U.S.N.M. No. 174738; Bunguran Island, July 19, 1900.

Juvenal male, U.S.N.M. No. 174739; Bunguran Island, July 5, 1900.

Adult female, U.S.N.M. No. 174740; Bunguran Island, June 22, 1900. Length in flesh, 140 mm.

These appear to be inseparable from the race recently described from the Anamba Islands. The juvenal male and the adult male No. 174737 are in process of molt of both quills and contour feathers. The juvenal differs from the adult male in much lighter coloration on the under parts and sides of the head. The tail resembles that of the adult female, but is being replaced by the black feathers of the adult plumage. From the female this juvenal male differs in its darker colors above and below, particularly on the sides and top of the head; the lower surface is also less yellowish; and the wings black instead of dark brown.

Measurements of these Natuna birds are given in Table 25.

TABLE 25.—*Measurements of specimens of* Aegithina viridissima thapsina

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Tarsus
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174737	♂	Bunguran Island..	July 1	W. L. Abbott	133	65	45	15	17.5
174738	♂	-----do----------	July 19	-----do-------	--------	62	46	15	19
174739	♂ juv.	-----do----------	July 5	-----do-------	--------	61	44	14.5	18
174740	♀	-----do----------	June 22	-----do-------	140	61	47	15	18

[1] Measured in the flesh by the collector.

PYCNONOTUS SIMPLEX PERPLEXUS Chasen and Kloss

Pycnonotus simplex perplexus CHASEN and KLOSS, Journ. f. Orn., Ergänzungsband 2, p. 116, Oct. 29, 1929. ("Balambangan Island, British North Borneo.")

Subspecific characters.—Similar to *Pycnonotus simplex simplex* from Sumatra,[17] but lower parts darker, more buffy (less yellowish); upper surface lighter and somewhat more brownish; and iris red.

Description.—Adult male, U.S.N.M. No. 183030, Mahakam River, eastern Borneo, March 20, 1914; H. C. Raven; original number, 1274. Upper surface brownish olive, but the rump rather light olive-brown and the upper tail coverts olive-brown; wings and tail between clove brown and sepia, the wing quills, their superior coverts, and the rectrices, narrowly edged exteriorly with light brownish olive; sides of head and neck brownish olive, the shafts of the auric-

[17] *Cf.* Oberholser, U. S. Nat. Mus. Bull. 98, pp. 44, 45, June 30, 1917.

ulars a little paler; sides of breast slightly rufescent olive-brown; lower parts generally dull light cream-buff, clearer on the throat, but the sides, flanks, and broad basal shaft markings of the longest lower tail coverts, buffy brown, the breast and jugulum heavily washed with buffy brown; lining of wing cream-buff, posteriorly paler, some of the feathers with buffy brown centers; thighs buffy brown, mixed with cream-buff.

The birds of this species from the southern islands of the Natuna group belong to the subspecies described above, although in coloration of plumage they verge slightly toward the following race from the northern Natuna Islands. The present form of *Pycnonotus simplex* is the only one, so far as yet known, that has a red iris, as in *Pycnonotus brunneus*, this part being white or whitish in all the others.

In the Bornean bird, however, all the other characters are those of *Pycnonotus simplex*, not of *Pycnonotus brunneus;* therefore, notwithstanding that the red iris is, except in this particular case, a specific character between these two species, the Bornean bird should apparently stand as a subspecies of *Pycnonotus simplex.*

The six birds obtained by Doctor Abbott are from the islands of Sirhassen, Brian, and Subi, and are not essentially different from Borneo specimens. They are as follows:

Adult male, U.S.N.M. No. 174758, Sirhassen Island; June 1, 1900. "Iris red."

Adult male, U.S.N.M. No. 174759; Sirhassen Island, June 3, 1900. "Iris red; feet fleshy brown."

Adult female, U.S.N.M. No. 174756; Brian Island, near Sirhassen Island, May 31, 1900. "Iris red; feet brownish fleshy; bill brownish black, pale fleshy beneath at base."

Adult female, U.S.N.M. No. 174757; Sirhassen Island, June 1, 1900. "Iris red; feet fleshy brown."

Adult female, U.S.N.M. No. 174747; Pulo Subi (North Islet), June 12, 1900. "Iris red."

Adult female, U.S.N.M. No. 174760; Sirhassen Island, June 4, 1900. "Iris red."

Most of these specimens are in considerably worn plumage. All show some evidences of molt; in four slight and confined to the contour feathers; in the two others, No. 174747, taken on June 12, and No. 174758, taken on June 1, much more extensive and, in the latter, involving also the wing quills.

Measurements are given in Table 26.

Doctor Abbott reported this bird common on Sirhassen Island and on Pulo Subi.

TABLE 26.—*Measurements of specimens of* Pycnonotus simplex perplexus

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
					Mm.	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174758	♂	Sirhassen Island, Natuna Islands.	1900 June 1	W. L. Abbott	187	86	69.5	13.5	6	18	12
174759	♂	do	June 3	do	184	83.5	69	13.5	6	18.5	12
183030	♂	Mahakam River, eastern Borneo.	1914 Mar. 20	H. C. Raven	-----	80	68	13.5	5.5	17.5	11
Average of 3 males					185.5	83.2	68.8	13.5	5.8	18	11.7
174756	♀	Sirhassen Island, Natuna Islands.	1900 May 31	W. L. Abbott	178	80.5	65.5	13	6	18	11.5
174757	♀	do	June 1	do	178	78.5	63	13	6	17.5	11.5
174760	♀	do	June 4	do	171	75.5	66	13	6	17	11
174747	♀	Pulo Subi, Natuna Islands.	June 12	do	178	83.5	65	13	6	18	11
Average of 4 females					176.3	79.5	64.9	13	6	17.6	11.3

[1] Measured in the flesh by the collector.

PYCNONOTUS SIMPLEX AXANTHIZUS, new subspecies

Subspecific characters.—Similar to *Pycnonotus simplex perplexus* from Borneo, but somewhat larger; with the dark brown areas of lower parts somewhat less rufescent (more grayish), the light areas paler, more clearly yellow (less buffy); upper parts averaging less brownish; and iris white.

Description.—Type, adult male, U.S.N.M. No. 174754; Bunguran Island, Natuna Islands, South China Sea, July 13, 1900; Dr. W. L. Abbott. Upper parts olive, rather brownish, but rump olive-brown, and upper tail coverts of the same color though darker; wings and tail between clove brown and sepia, the wing-quills, greater and median coverts, the rectrices more narrowly, edged exteriorly with light brownish olive, the lesser coverts with buffy olive; sides of head and neck brownish olive, the shafts of auriculars a little paler; sides of breast olive brownish; most of under surface naphthalene yellow, somewhat duller on the chin and throat, but sides, flanks, and centers of the longest lower tail coverts, light olive-brown, the breast and jugulum heavily washed with the same; thighs light olive-brown tinged with pale yellow; lining of wing straw yellow; "iris white."

Geographic distribution.—Northern part of the Natuna Islands, South China Sea.

This race is apparently peculiar to the islands of Bunguran, Lingung, Laut, and probably neighboring islands in the northern part of the Natuna group, since the bird from Sirhassen Island is referable to the Bornean race. It differs from *Pycnonotus simplex halizonus*, of the Anamba Islands in somewhat smaller size, lighter, more brownish (less greenish) upper parts, somewhat paler, more rufescent (less

grayish) dark brown areas of lower surface, and usually lighter, brighter, coloration of jugulum and upper breast.

Doctor Abbott collected the following 10 specimens from the islands of Bunguran, Lingung, and Laut:

Adult male (type), U.S.N.M. No. 174754; Bunguran Island, July 13, 1900. "Iris white."

Adult male, U.S.N.M. No. 174752; Bunguran Island, July 4, 1900. "Iris white; feet fleshy brown."

Adult male, U.S.N.M. No. 174751; Bunguran Island, July 9, 1900. "Iris white."

Adult male, U.S.N.M. No. 174746; Pulo Laut, August 7, 1900. "Iris white."

Adult female, U.S.N.M. No. 174753; Bunguran Island, July 21, 1900. "Iris white; feet fleshy brown."

Adult female, U.S.N.M. No. 174749; Pulo Lingung, near Bunguran Island, June 14, 1900. "Iris white; feet pale fleshy brown."

Adult female, U.S.N.M. No. 174755; Bunguran Island, July 13, 1900. "Iris white."

Adult female, U.S.N.M. No. 174750; Pulo Lingung, near Bunguran Island, June 16, 1900. "Iris white; feet pale brownish fleshy."

Adult female, U.S.N.M. No. 174748; Pulo Lingung, June 14, 1900. "Iris grayish white."

Adult female, U.S.N.M. No. 174745; Pulo Laut, August 7, 1900. "Iris white."

All these are in progress of molt, both of quills and contour feathers, the birds taken in June least so. Nearly all that were taken in July are in worn plumage.

Measurements are given in Table 27.

TABLE 27.—*Measurements of specimens of* Pycnonotus simplex axanthizus

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length[1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174752	♂	Bunguran Island	July 4	W. L. Abbott	171	81	65	13	6	18	11.5
174751	♂	do	July 9	do	178	79	72	13.5	6	18	11.5
174754	♂	do.[2]	July 13	do	171	81	67	12	5	17	10.5
174746	♂	Pulo Laut	Aug. 7	do	181	84.5	72.5	13	5.5	17.5	11
Average of 4 males					175.3	81.4	69.1	12.9	5.6	17.6	11.1
174748	♀	Pulo Lingung	June 14	W. L. Abbott	165	75	64.5	12	5	17	11
174749	♀	do	do	do	184	81	67	13	5	17.5	11.5
174750	♀	do	June 15	do	171	79.5	63	-----	6	17	10.5
174755	♀	Bunguran Island	July 13	do	168	76	66.5	-----	5.5	18	11.5
174753	♀	do	July 21	do	178	80	68	13	6.5	17.5	11.5
174745	♀	Pulo Laut	Aug. 7	do	168	81	68	12	6	17.5	10.5
Average of 6 females					172.3	78.8	66.2	12.5	5.7	17.4	11.1

[1] Measured in the flesh by the collector.

[2] Type.

*IOLE OLIVACEA CRYPTA Oberholser

Iole olivacea crypta Oberholser, Proc. Biol. Soc. Washington, vol. 31, p. 197, Dec. 30, 1918. ("Pulo Jimaja, Anamba Islands, South China Sea.")

A single specimen is reported by Doctor Hartert [18] from Bunguran Island as *Iole olivacea;* but although no Natuna Island specimens have been examined in the present connection, the race occurring here is probably that from the Anamba Islands as given above.

TRICHOLESTES CRINIGER CRINIGER (Blyth)

Br[achypodius].? criniger Blyth, Journ. Asiat. Soc. Bengal, vol. 14, no. 164, p. 577, Aug., 1845 (Hay MS.). ("Malacca.")

Three specimens are in Doctor Abbott's collection:

Adult male, U.S.N.M. No. 174773, Bungaran Island, July 18, 1900. Length in flesh, 171 mm. "Iris brown; feet olive brown; bill leaden blue, black above on culmen."

Adult male, U.S.N.M. No. 174775; Bunguran Island, July 22, 1900. Length in flesh, 165 mm.

Adult male?, U.S.N.M. No. 174774; Bunguran Island, July 19, 1900. Length in flesh, 159 mm.

Molt is evident in the contour feathers of all three and in the wing quills of Nos. 174774 and 174775. These examples apparently do not differ importantly from birds found on the Malay Peninsula.

Doctor Abbott says that he found this species living in the dense jungle. Doctor Hartert records [19] this species from also Pulo Laut, from a specimen shot in September.

Measurements are given in Table 28.

Table 28.—*Measurements of specimens of* Tricholestes criniger criniger

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174773	♂	Bunguran Island	July 15	W. L. Abbott	171	80	70	13.5	5	15	8.5
174775	♂	do	July 22	do	165	74	66.5	13	5	15.5	8.5
174774	[♂?]	do	July 19	do	159	71.5	61	14	5	15.5	8.5

[1] Measured in the flesh by the collector.

ALOPHOIXUS PHAEOCEPHALUS (Hartlaub)

Ixos (Trichixos) phæocephalus Hartlaub, Rev. Zool., vol. 7, p. 401, Nov., 1844. ("Malacca.")

A single female, U.S.N.M. No. 174776, taken on Bunguran Island, July 18, 1900, is in the collection. Length in flesh, 194 mm. "Feet pale flesh color; bill horny blue, blackish at base."

[18] Nov. Zool., vol. 1, no. 2, p. 474, Apr. 16, 1894.

[19] Nov. Zool., vol. 2, no. 3, p. 468, Aug. 17, 1895.

It is in a state of nearly completed molt, from juvenal to adult plumage, the only remaining traces of the former being the rusty inner secondaries. There remains little trace of molt among the contour feathers, but some of the wing quills are only partly grown.

Family TURDIDAE

*PETROPHILA SOLITARIA PHILIPPENSIS (Müller)

Turdus Philippensis MÜLLER, Linné Vollständigen Natursystems, Supplements- und Register-Band, p. 145, 1776. ("Philippinischen Inseln.")

Recorded from Bunguran Island by Hartert,[20] under the name *Monticola cyanus solitaria.*

KITTACINCLA MALABARICA EUMESA, new subspecies

Subspecific characters.—Similar to *Kittacincla malabarica suavis,* from eastern Borneo, but in both male and female with posterior lower parts very much darker, outer pair of tail feathers with conspicuous blackish bases, and upper parts rather more metallic (less velvety).

Description.—Type, adult male, U.S.N.M. No. 174742, Bunguran Island, Natuna Islands, July 14, 1900; Dr. W. L. Abbott. Head, neck all around, and upper parts, somewhat shiny bluish black; the rump and upper tail coverts white; middle tail feathers black, the rest of the tail white; wings brownish black, their exposed portions less brownish, the lesser coverts edged with the color of the back, the middle and greater coverts narrowly edged with the same; breast burnt sienna; abdomen, sides, and flanks, Sanford's brown; crissum dull Sanford's brown; axillars Sanford's brown; under wing coverts cinnamon-rufous.

Doctor Abbott sent the following 4 examples:

Adult male (type), U.S.N.M. No. 174742, Bunguran Island, July 14, 1900. Length in flesh, 273 mm.

Juvenal male, U.S.N.M. No. 174743, Bunguran Island, July 19, 1900.

Adult female, U.S.N.M. No. 174741, Bunguran Island, July 14, 1900. Length in flesh, 242 mm.

Female in first autumn plumage, U.S.N.M. No. 174744, Pulo Lingung, June 14, 1900. Length in flesh, 222 mm.

The male of the Natuna Islands race differs conspicuously from *Kittacincla malabarica ochroptila*[21] from the Anamba Islands in its much darker posterior lower parts; while the adult female is much darker both above and below than the female of the Anamba bird, as well as being much more metallic on throat, jugulum, and upper parts, including the wings. It is much darker throughout, except, of course, the white rump, and much more metallic on the blackish

[20] Nov. Zool., vol. 1, no. 2, p. 469, Apr. 16, 1894.

[21] Oberholser, U. S. Nat. Mus. Bull. 98, p. 51, June 30, 1917. ("Pulo Siantan, Anamba Islands.")

areas than even the female of *Kittacincla malabarica heterogyna*[22] from Pulo Riabu in the Anamba group. In fact, the female of this new subspecies is of almost the same color as the male, except for lighter posterior lower parts; but it is decidedly smaller, as the measurements in Table 29 show.

The female in what appears to be first autumn plumage is very much lighter and duller throughout than the adult, the upper surface and anterior lower parts being brownish slate, the wings dull brown with tawny feather tips on the greater and median coverts.

The immature male is in process of change from the juvenal to the first autumn plumage, although there is little evidence of molt except on the upper surface. In color it is much like the immature female above described, but the upper parts are somewhat lighter; the middle of the throat is buffy, leaving only an irregular band of brownish slate color across the jugulum; there are roundish buff spots on the tips of the scapulars, greater and median coverts; the posterior lower parts are paler, and the middle of abdomen more extensively whitish.

Doctor Abbott found this species inhabiting the dense jungle here, as elsewhere.

TABLE 29.—*Measurements of specimens of* Kittacincla malabarica eumesa

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174742	♂	Bunguran Island[2]	July 14	W. L. Abbott	273	99	156	15.5	6	25.5	17
174743	♂ juv.	do	July 19	do		84	76.5	13.5	5	24	14.5
174744	♀	Pulo Lingung	July 14	do	222	86.5	102	16	6	25.5	16
174741	♀	Bunguran Island	do	do	242	94	126	15.5	5	25	16.5
Average of 2 females					232	90.3	114	15.8	5.5	25.3	16.3

[1] Measured in the flesh by the collector. [2] Type.

The apparently recognizable races of *Kittacincla malabarica* number 19, as follows:

1. *Kittacincla malabarica malabarica* (Scopoli).

Muscicapa malabarica SCOPOLI, Deliciae florae et faunae insubricae, pt. 2, p. 96, 1786. ("China.")

Kittacincla macroura indica BAKER, Fauna of British India, Birds, vol. 2, p. 118, Apr., 1924. ("Bhutan Duars.")

Geographic distribution.—Ceylon, north to northern India and Assam, east to Yunnan in China, and to Burma.

2. *Kittacincla malabarica interposita* Robinson and Kloss.

Kittacincla malabarica interposita ROBINSON and KLOSS, Journ. Federated Malay States Mus., vol. 10, pt. 4, p. 262, Dec., 1922. ("Daban, South Annam.")

[22] Oberholser, U. S. Nat. Mus. Bull. 98, p. 53, June 30, 1917. ("Pulo Riabu, Anamba Islands.")

Geographic distribution.—South Annam and Cochin China to Siam.

3. *Kittacincla malabarica macroura* (Gmelin).

Turdus macrourus Gmelin, Systema naturae, vol. I, pt. 2, p. 820, Apr. 20, 1789. ("Pulo Condore et Malabar.")

Geographic distribution.—Pulo Condore, China Sea.

4. *Kittacincla malabarica minor* Swinhoe.

Kittacincla macrura var. *minor* Swinhoe, Ibis, new [2d] ser., vol. 6, no. 23, p. 344, July, 1870. ("Central Hainan.")

Kittacincla brevicauda Grant, Ibis, ser. 7, vol. 5, no. 20, p. 584, Oct., 1899 (published, Nov., 1899). ("lower slopes of the Five-finger Mountain in the interior of Hainan.")

Geographic distribution.—Island of Hainan.

5. *Kittacincla malabarica pellogyna* Oberholser.

Kittacincla malabarica pellogyna Oberholser, Smithsonian Misc. Coll., vol. 76, no. 6, p. 4, July 16, 1923. ("Bok Pyim, Tenasserim.")

Geographic distribution.—Tenasserim and the Malay Peninsula south to Johore.

6. *Kittacincla malabarica lamprogyna* Oberholser.

Kittacincla malabarica lamprogyna Oberholser, Smithsonian Misc. Coll., vol. 76, no. 6, p. 5, July 16, 1923. ("St. Luke Island, Mergui Archipelago.")

Geographic distribution.—Mergui Archipelago, Bay of Bengal.

7. *Kittacincla malabarica albiventris* Blyth.

Kittacincla albiventris Blyth, Ibis, ser. 1, vol. 1, no. 1, p. 114 (in text), Jan., 1859, ("Andaman Islands.")

Geographic distribution.—Andaman Islands.

8. *Kittacincla malabarica mallopercna* Oberholser.

Kittacincla malabarica mallopercna Oberholser, Smithsonian Misc. Coll., vol. 76, no. 6, p. 5, July 16, 1923. ("Sing Kep Island, Berhala Strait, off southeastern Sumatra.")

Geographic distribution.—Sumatra to Singapore and southern end of Malay Peninsula (Malacca).

9. *Kittacincla malabarica opisthisa* Oberholser.

Kittacincla malabarica opisthisa Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 13, Oct. 26, 1912. ("Pulo Tuanku, Banjak Islands.")

Geographic distribution.—Banjak Islands, Barussan Islands, western Sumatra.

10. *Kittacincla malabarica opisthopela* Oberholser.

Kittacincla malabarica opisthopela Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 13, Oct. 26, 1912. ("Tana Bala Island, Batu Islands.")

Geographic distribution.—Batu Islands, Barussan Islands, western Sumatra.

11. *Kittacincla malabarica abbotti* Oberholser.

Kittacincla malabarica abbotti Oberholser, Smithsonian Misc. Coll., vol. 76, no. 6, p. 5, July 16, 1923. ("Tanjong Bedaan, Banka Island, southeastern Sumatra.")

Geographic distribution.—Islands of Banka and Billiton, east of Sumatra.

12. *Kittacincla malabarica tricolor* (Vieillot).

Turdus tricolor VIEILLOT, Nouveau dictionnaire d'histoire naturelle, vol. 20, p. 291, 1818 (based on "pl. 114 des Oiseaux d'Afrique de Levaillant"). ("îles de la mer du Sud.")

[*Grillivora*] *longicauda* SWAINSON, Natural history and classification of birds, vol. 2, p. 238, July 1, 1837 (based on "O. d'Af. pl. 114"). (Type locality now first designated, Bantam, western Java.)

Geographic distribution.—Western Java.

The use of the subspecific name *tricolor* for this race from western Java requires a little explanation. Vieillot's *Turdus tricolor* [23] was based on Levaillant's Oiseaux d'Afrique, vol. 3, p. 67, pl. 114, 1802, with a good description, and its locality was cited as follows:

"On soupçonne que cette espèce se trouve dans les îles de la mer du Sud."

In the text to Levaillant's plate 114 there occurs this statement concerning the origin of the specimen that formed the basis of Levaillant's description: "cette espèce appartient encore aux climats du sud faisoit partie de l'envoi fait au cit. Gigot-Dorcy par M. Woodfort." From the text to the preceding plate we learn that the bird thereon figured came from "des îles de la mer du Sud." The statement in the text to plate 114, page 67—"aux climats du sud"—was therefore merely another way of saying "îles de la mer du Sud." This being the case, it seems logical to consider that the type locality of "le merle tricolor a longue queue" of Levaillant, plate 114, which is in turn the basis of *Turdus tricolor* Vieillot, is some one of the islands in the southern seas from the Indian Ocean to the Pacific Ocean, all of which area was formerly included in the expression "south seas." From this viewpoint Hartert [24] was hardly within his rights of subsequent designation of the type locality as "India," which can not be considered as one of "des îles de la mer de la Sud."

It seems, therefore, that Kloss [25] has properly restricted the type locality to Bantam, West Java, which island is the one most likely to have been the origin of the specimen used by Levaillant as the basis of his description and plate. The name *Turdus tricolor* thus becomes available for the subspecies from western Java, as above indicated.

13. *Kittacincla malabarica javana* Kloss.

Kittacincla malabarica javana KLOSS, Journ. Federated Malay States Mus., vol. 10, pt. 3, p. 210, June, 1921. ("Karangbolang, South Coast of Mid-Java.")

Geographic distribution.—Central southern Java.

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[23] Nouveau dictionnaire d'histoire naturelle, vol. 20, p. 291, 1818.

[24] Nov. Zool., vol. 9, no. 3, p. 572, Dec. 16, 1902.

[25] Journ. Federated Malay States Mus., vol. 10, pt. 3, p. 210, June, 1921.

14. *Kittacincla malabarica omissa* Hartert.

Kittacincla macrurus omissa Hartert, Nov. Zool., vol. 9, no. 3, p. 512, Dec. 16, 1902. ("Lawang, East Java.")

Geographic distribution.—Eastern Java.

15. *Kittacincla malabarica suavis* (Sclater).

Copsychus suavis Sclater, Proc. Zool. Soc. London, for 1861, p. 185, Aug. 1, 1861. ("In Borneo meridionali.")

Geographic distribution.—Southeastern and northeastern Borneo.

16. *Kittacincla malabarica zaphotina* Oberholser.

Kittacincla malabarica zaphotina Oberholser Smithsonian Misc. Coll., vol. 76, no. 6, p. 6, July 16, 1923. ("central Borneo.")

Geographic distribution.—Central and western Borneo.

17. *Kittacincla malabarica eumesa* Oberholser.

Kittacincla malabarica eumesa Oberholser, antea, p. 81.

Geographic distribution.—Natuna Islands.

18. *Kittacincla malabarica ochroptila* Oberholser.

Kittacincla malabarica ochroptila Oberholser, U. S. Nat. Mus. Bull. 98, p. 51, June 30, 1917. ("Pulo Siantan, Anamba Islands.")

Geographic distribution.—The Anamba Islands, except the southern islands of Pulo Riabu and Pulo Piling.

19. *Kittacincla malabarica heterogyna* Oberholser.

Kittacincla malabarica heterogyna Oberholser, U. S. Nat. Mus. Bull. 98, p. 53, June 30, 1917. ("Pulo Riabu, Anamba Islands.")

Geographic distribution.—Pulo Riabu and Pulo Piling, in the southern Anamba Islands.

*LOCUSTELLA CERTHIOLA (Pallas)

Motacilla Certhiola Pallas, Zoographia Rosso-Asiatica, vol. 1, p. 509, 1811. ("regionum ultra Baicalem lacum.")

Reported by Hartert [26] from Sirhassen Island, September 23, 1893.

Family SYLVIIDAE

*ACANTHOPNEUSTE BOREALIS BOREALIS (Blasius)

Phyllopneuste borealis H. Blasius, Naumannia, vol. 8, p. 313, 1858. ("vom ochotzkischen Meere.")

Recorded by Hartert [27] from Bunguran Island, October 9–19, 1893.

ORTHOTOMUS ATROGULARIS MAJOR Chasen and Kloss

Orthotomus atrigularis major Chasen and Kloss, Journ. Malayan Branch Roy. Asiatic Soc., vol. 6, pt. 3, p. 60, Aug., 1928. ("Siantan Island, Anamba group.")

Three examples are in Doctor Abbott's collection:

Adult male, U.S.N.M. No. 174819, Pulo Lingung, near Bunguran Island, June 17, 1900.

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[26] Nov. Zool., vol. 1, no. 2, p. 469, Apr. 16, 1894. [27] Nov. Zool., vol. 1, no. 2, p. 469, Apr. 16, 1894.

Adult male, U.S.N.M. No. 174820, Bunguran Island, June 23, 1900.

Adult male, U.S.N.M. No. 174818, Bunguran Island, June 22, 1900. "Iris pale brown."

They apparently do not differ in any essential respect from typical Malay Peninsula specimens. Their measurements are given in Table 30.

TABLE 30.—*Measurements of specimens of* Orthotomus atrogularis major

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174818	♂	Bunguran Island	June 22	W. L. Abbott	121	45	40.5	14	3.5	19.5	9.5
174819	♂	do	June 23	do	121	44.5	43	14	3.5	19.5	9.5
174820	♂	do	June 17	do	121	47	41	14	3.5	19	9.5
Average of 3 males					121	45.5	41.5	14	3.5	19.3	9.5

[1] Measured in the flesh by the collector.

This species has been recorded by Doctor Hartert [28] also from Pulo Pandak.

ORTHOTOMUS SERICEUS RUBICUNDULUS Chasen and Kloss

Orthotomus ruficeps rubicundulus CHASEN and KLOSS, Nov. Zool., vol. 36, no. 2, p. 279, Apr. 22, 1931. ("Sirhassen Island, South Natuna Islands.")

The birds of this species from the Natuna Islands are in color apparently not different from those of the typical *Orthotomus sericeus sericeus* from Borneo, and are separable only by larger bill.

The following 4 specimens were obtained by Doctor Abbott:

Adult male, U.S.N.M. No. 174824, Pulo Subi (north islet), June 12, 1900.

Adult male, U.S.N.M. No. 174823, Brian Island, near Sirhassen Island, May 31, 1900.

Adult female, U.S.N.M. No. 174821, Sirhassen Island, June 5, 1900. "Iris pale yellow brown."

Juvenal female, U.S.N.M. No. 174822, Brian Island, May 31, 1900.

The adult female is more buffy on the lower parts than are the males, but does not otherwise differ in color, though in size is of course less. The juvenal female (No. 174822) is beginning to molt into the first autumn plumage, and has already considerable chestnut on the crown. The adults likewise show indications of feather renewal.

Measurements are given in Table 31.

[28] Nov. Zool., vol. 2, no. 3, p. 466, Aug. 17, 1895.

The use of the name *Orthotomus sericeus* Temminck [29] for this species, in place of *Orthotomus ruficeps*, is explained below.

TABLE 31.—*Measurements of specimens of* Orthotomus sericeus rubicundulus

U.S.N.M.No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174823	♂	Brian Island	May 31	W. L. Abbott	140	53.5	44.5	16.5	4	22	11.5
174824	♂	Pulo Subi	June 12	do	137	52.5	41	16.5	4	22	11
Average of 2 males					138.5	53	42.8	16.5	4	22	11.3
174822	♀juv.	Brian Island	May 31	do		50	36.5	15.5	3.5	22	11
174821	♀	Sirhassen Island	June 5	do	133	51.5	39	16.5	4	21.5	10.5
Average of 2 females					133	50.8	37.8	16	3.8	21.8	10.8

[1] Measured in the flesh by the collector.

The apparent necessity for changing the specific name of the species, has made desirable an examination of birds from various parts of the range to determine the status of the Natuna Islands form, and this has brought to light two additional subspecies, which are herewith characterized in a synopsis of all the four races:

1. *Orthotomus sericeus sericeus* Temminck.

Orthotomus sericeus TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, vol. 3, texte to livr. 101, p. [5], 1836, after Aug. 30. ("Bornéo.")
Orthotomus ruficeps AUCT., part, *nec* Lesson.

Subspecific characters.—Size rather large; gray of upper parts rather light and clear.

Measurements.—Six males: Wing, 49–54.5 (average, 52.4) mm.; tail, 41.5–46.5 (43.3); exposed culmen, 15–16 (15.2); height of bill at base, 4; tarsus, 20.5–22 (21.5); middle toe without claw, 10–11.5 (10.8).

Three females: Wing, 47.5–51 (average, 49); tail, 36–40.5 (38); exposed culmen, 14–15.5 (14.7); height of bill at base, 4–4.5 (4.3); tarsus, 19.5–22 (20.3); middle toe without claw, 10–11 (10.5).

Geographic distribution.—Borneo.

This species has almost always been called *Orthotomus ruficeps* (Lesson). Examination, however, of the original description of Lesson's bird, *Edela ruficeps* [30] shows that it does not fit the present species. This description is as follows (italics ours):

Tête et joues rousses; dos gris roussâtre; *dessous du corps gris cendré;* milieu du ventre blanchâtre. Queue rousse.

Habite la côte nord ouest de la Nouvelle-Hollande (Labillardière).

[29] *Orthotomus sericeus* Temminck, Nouveau recueil de planches coloriées d'oiseaux, vol. 3, 1836, texte to livr. 101, p. [5], 1836, after Aug. 30. ("Bornéo.")

[30] Traité d'ornithologie, p. 309, Sept. 25, 1830. ("la côte nord-ouest de la Nouvelle Hollande.")

It will at once appear that the expression "dessous du corps gris cendré" can not by any stretch of the imagination apply to the *Orthotomus ruficeps* of authors; but the whole description is an excellent characterization of *Orthotomus cineraceus* Blyth,[31] even to the phrase "milieu du ventre blanchâtre," as contrasted with "dessous du corps gris cendré." Since, therefore, *Edela ruficeps* Lesson applies to the same species as *Orthotomus cineraceus* Blyth, and antedates the latter name by 15 years, it must supplant the latter, which, by an unfortunate transfer of name, will therefore become *Orthotomus ruficeps* (Lesson). The locality originally given, as above quoted, is the northwestern coast of Australia, which is, of course, erroneous; we therefore designate Malacca, Malay Peninsula, as the type locality of *Edela ruficeps* Lesson, which disposition makes *Orthotomus cineraceus* Blyth a strict synonym.

It may be worth while also to mention that the generic name *Edela* Lesson,[32] the type of which is, by monotypy, *Edela ruficeps* Lesson, has consequently now for its type the species heretofore known as *Orthotomus cineraceus*, instead of that called by mistake *Orthotomus ruficeps*. Since these two species are, however, apparently congeneric with the type of the genus *Orthotomus* Horsfield, this involves, at least for the present, no change in generic name.

By reason of the above-discussed transference of the name *Orthotomus ruficeps* to a different species, the bird currently thus known must be otherwise provided for. The only other available name for the species is *Orthotomus sericeus* Temminck,[33] described from Borneo. This species, therefore, heretofore known as *Orthotomus ruficeps* (Lesson), will become *Orthotomus sericeus* Temminck.

2. *Orthotomus sericeus rubicundulus* Chasen and Kloss.

Orthotomus ruficeps rubicundulus Chasen and Kloss, Nov. Zool., vol. 36, no. 2, p. 279, Apr. 22, 1931. ("Sirhassen Island, South Natuna Islands.")

Subspecific characters.—Similar to *Orthotomus sericeus sericeus*, but bill decidedly larger.

Measurements.—Two males: Wing, 52.5–53.5 (average, 53) mm.; tail, 41–44.5 (42.7); exposed culmen, 16.5; height of bill at base, 4; tarsus, 22; middle toe without claw, 11–11.5 (11.3).

Two females: Wing, 50–51.5 (average, 50.7); tail, 36.5–39 (37.8); exposed culmen, 15.5–16.5 (16); height of bill at base, 3.5–4 (3.8); tarsus, 21.5–22 (21.8); middle toe without claw, 10.5–11 (10.8).

Geographic distribution.—Natuna Islands.

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[31] Journ. Asiatic Soc. Bengal, vol. 14, pt. 2, no. 164, new ser. no. 80, p. 589, for August, 1845. (Malacca.)

[32] Traité d'ornithologie, p. 309, Sept. 25, 1830.

[33] *Orthotomus sericeus* Temminck, Nouveau recueil de planches coloriées d'oiseaux, texte to livr. 101, p. [5], 1836, after August 30 ("Bornéo").

Although the female is somewhat more buffy on the under surface than is the male, this race does not seem to be different in color from the other subspecies.

3. *Orthotomus sericeus eupolius*, new subspecies.

Orthotomus ruficeps Auct. (part), *nec* Lesson.

Subspecific characters.—Similar to *Orthotomus sericeus sericeus*, but bill larger; wing, tail, and tarsus somewhat longer; gray of upperparts paler and less brownish (more purely gray).

Description.—Type, adult male, U.S.N.M. No. 200605, Sibutu Island, Philippine Islands, January 7, 1906; Dr. E. A. Mearns. Original number, 13861. Pileum, lores, periophthalmic region, and post-ocular region, between burnt sienna and chestnut; cervix, upper half of sides of neck, back, scapulars, and rump, rather deep and somewhat brownish neutral gray; upper tail coverts between olive-brown and army brown; tail rather light auburn; wings between hair brown and chaetura drab, the outer margins of the quills dark drab, the inner margins, except terminal portion of primaries, wood brown; exposed surface of superior wing quills, gray like the back; lower half of sides of head and of neck, together with lower surface, white, a little washed with gray on sides, also washed slightly on sides, and more so on abdomen, with cream color; thighs between Sanford's brown and auburn; lining of wing white except for a broad spot of auburn on outer posterior portion.

Measurements.—Six males: Wing, 51.5–57 (average, 53.4) mm.; tail, 43–46.5 (44.8); exposed culmen, 15–17 (16.1); height of bill at base, 3–4 (3.5); tarsus, 22–22.5 (22.3); middle toe without claw, 11–12 (11.3).

Seven females: Wing, 44–53 (average, 50.1) mm.; tail, 33.5–45.5 (40.5); exposed culmen, 14–16 (15.1); height of bill at base, 3–4 (3.5); tarsus, 19–23 (21.4); middle toe without claw, 10–11.5 (10.8).

Geographic distribution.—Southwestern Philippine Islands.

4. *Orthotomus sericeus hesperius*, new subspecies.

Orthotomus ruficeps Auct. (part), *nec* Lesson.

Subspecific characters.—Similar to *Orthotomus sericeus sericeus*, from Borneo, but smaller; and upper parts (except pileum) somewhat darker, more brownish (less clearly grayish).

Description.—Type, adult male, U.S.N.M. No. 170785, Linga Island, Rhio Archipelago, July 19, 1899; Dr. W. L. Abbott. Pileum, lores, orbital region, and supra-auricular area, reddish brown, between auburn and burnt sienna; back, scapulars, and rump, deep mouse gray with a wash of brownish, the cervix more rufescent, forming the transition to the pileum; upper tail coverts dull drab; tail

snuff brown, with rather light fuscous shaft stripes, these broader basally, but not reaching to the ends of the feathers, though on the long middle rectrices broadening into a subterminal spot; wings fuscous, the quills and coverts all edged with the mouse gray of back; inner margins of secondaries, and of all but terminal portions of primaries, vinaceous-buff; cheeks and auriculars light buff; sides of neck like the back; intervening postauricular region, together with most of the lower parts, dull white washed with light buff, least so on middle of upper throat and middle of lower breast and of upper abdomen, the sides also washed with grayish; sides of jugulum heavily, its middle portion sparingly and obscurely, streaked with dark mouse gray; flanks and crissum dull pinkish buff; thighs between cinnamon and orange-cinnamon; edge of wing warm buff; lining of wing dull white tinged with light pinkish cinnamon and marked on median posterior portion with a conspicuous spot of dull orange-cinnamon.

Measurements.—Seven males: Wing, 46–50.5 (average, 48.5) mm.; tail, 38–41.5 (40.2); exposed culmen, 15–16.5 (15.6); height of bill at base, 3–4 (3.5); tarsus, 20.5–22 (21.2); middle toe without claw, 10.5–11.5 (10.7).

One female: Wing, 42.5; tail, 36; exposed culmen, 15; height of bill at base, 3.5; tarsus, 21.2; middle toe without claw, 9.

Geographic distribution.—Sumatra to the Malay Peninsula and southern Tenasserim.

This race is smaller, as well as darker and less clearly gray above, than any of the other forms of the species.

The juvenal plumage differs from that of the adult in lacking the chestnut crown, this part being uniform in color with the remainder of the upper surface; in having the cervix, back, scapulars, rump, and upper tail coverts more rufescent (less purely grayish); tail with much greater areas of dark brown or blackish; wing edgings much more rufescent or olivaceous; lower surface suffused with yellowish instead of buffy; and jugulum much less distinctly or not at all streaked with dusky.

Family MOTACILLIDAE

*BUDYTES FLAVUS TAIVANUS Swinhoe

Budytes taivana Swinhoe, Proc. Zool. Soc. London, vol. 31, p. 334, Oct., 1863. ("Formosa"; based on *Budytes flava* var. *rayi* Swinhoe, variety from Formosa, Ibis, ser. 1, vol. 5, no. 19, p. 310, July, 1863.)

Birds belonging presumably to this form have been recorded by Doctor Hartert[34] as *Motacilla flava* from both Bunguran and Sirhassen Islands.

[34] Nov. Zool., vol. 1, no. 2, p. 475, Apr. 16, 1894.

Family GRACULIDAE

GRACULA RELIGIOSA RELIGIOSA (Linnaeus)

[*Gracula*] *religiosa* LINNAEUS, Systema naturae, ed. 10, vol. 1, p. 108, Jan. 1, 1858. ("Asia" [= Java]).
Gracula javanensis AUCT.
Gracula javana AUCT.

Three specimens are in Doctor Abbott's collection:

Adult male, U.S.N.M. No. 174720, Pulo Midei, May 24, 1900. Length in flesh, 343 mm.

Adult male, U.S.N.M. No. 174718, Bunguran Island, July 24, 1900. Length in flesh, 337 mm.

Adult female, U.S.N.M. No. 174719, Bunguran Island, July 24, 1900. Length in flesh, 337 mm.

These seem to be subspecifically identical with birds from Borneo and Java, and thus not referable to *Gracula religiosa prasiocara* from the Anamba Islands. One of them, taken on May 24, 1900, on Pulo Midei, is in process of molting the contour feathers.

Doctor Abbott reports it fairly common on Pulo Midei. Doctor Hartert has recorded [35] from Sirhassen Island under the name *Gracula javanensis* what is probably this race.

Measurements of these three birds are given in Table 32.

TABLE 32.—*Measurements of specimens of* Gracula religiosa religiosa

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174720	♂	Pulo Midei	May 24	W. L. Abbott	343	189	90.5	----	18	39	35
174718	♂	Bunguran Island	July 24	do	337	181	87.5	27	17	39	33.5
Average of 2 males					340	185	89	27	17.5	39	34.3
174719	♀	Bunguran Island	July 24	W. L. Abbott	337	178	87.5	27	16.5	39.5	33

[1] Measured in the flesh by the collector.

The name *Gracula religiosa* Linnaeus is currently applied to the southern grackle, or talking myna, of southern India and Ceylon, and is usually cited from the twelfth edition of the Systema Naturae. It was, however, described also in the tenth edition, as follows:

[*Gracula*] *religiosa* [LINNAEUS, Systema naturae, ed. 10, vol. 1, p. 108, Jan. 1, 1858].
G. nigro violacea, macula alarum alba, fascia occipitis nuda flava.
Corvus javanensis. *Osb. iter.* 102
Sturnus indicus. *Bont. jav.* 67. *Will. orn.* 145, *t.* 38. *Raj. av.* 68.
Minor s. Mino. Edw. av. 17. *t.* 17. *Alb. av.* 2. *p.* 35. *t.* 38.
Habitat in Asia.

[35] Nov. Zool., vol. 1, no. 2, p. 476, Apr. 16, 1894.

It is difficult if not impossible to determine from the diagnosis given by Linnaeus whether this refers to the bird from southern India or to that from Java. The determination of the pertinence of the name *Gracula religiosa* probably will therefore rest on the references given.

The first of these, *Corvus javanensis* Osbeck,[36] is based exclusively on the bird from Java. The *Sturnus indicus* of Bontius[37] is, of course, from Java; while Willoughby[38] and Ray[39] quote "Sturnus Indicus Bontii" as the source of their birds, and mention no other locality. The "Minor s. Mino" of Edwards[40] is, according to his text, from Borneo, and both his figures evidently represent the bird from that island, notwithstanding the small size of the one he calls "Less." The remaining reference is from Albin,[41] who describes "The Minor" from "East India," and figures a bird that is evidently the Javan species.

It will thus be seen that all Linnaeus's references are based on the species now known as *Gracula javana;* and since the Linnaean name *Gracula religiosa*[42] is of considerably earlier date than *Eulabes javanus* Cuvier,[43] it seems that it necessarily becomes the proper name of the bird from Java.

The species formerly called *Gracula religiosa* becomes, by this change, *Gracula indica* (Cuvier),[44] which name was based on d'Aubenton's Planches Enluminées, No. 268, which appears to be the only one of the old figures that represents this species.

There are now 12 apparently distinct races of *Gracula religiosa*, of which the names and ranges are as follows:

1. *Gracula religiosa religiosa* Linnaeus.

[*Gracula*] *religiosa* Linnaeus, Systema naturae, ed. 10, vol. 1, p. 108, Jan. 1, 1858. ("Asia" [=Java].)

Gracula minor Forster, Indische zoologie, p. 40, 1781. (Based on "Edw. ibid."—"Minor or Mino, Greater and Less," Edwards, Natural history of uncommon birds, vol. 1, pl. 17, p. 17, 1776.; "Borneo.")

E[*ulabes*]. *javanus* Cuvier, Règne animal, ed. 2, vol. 1, p. 377, 1829. ("Java.")

Mainatus sumatranus Lesson, Traité d'ornithologie, p. 357, Dec. 1, 1830. ("Sumatra.")

Gr[*acula*]. *javanensis* Blyth, Journ. Asiatic Soc. Bengal, vol. 15, no. 169, p. 31, for Jan., 1846 (published after Jan.) (Osbeck MS.). ("Malacca.")

Geographic distribution.—Islands of Kangean, Bali, Java, Billiton, Banka, Sumatra with its eastern coast islands, and the Pagi Islands;

[36] Dogbok Ostindisk Resa, p. 102, 1757.
[37] Historiae naturalis et medicae Indiae orientalis, libri sex, p. 67, 1658.
[38] Ornithologiae libri tres, p. 145, 1676.
[39] Synopsis methodica avium et piscium, p. 68, 1713.
[40] Natural history of birds, vol. 1, p. 17, pl. 17, 1743.
[41] Natural history of birds, vol. 2, p. 35, pl. 38, 1738.
[42] Systema naturae, ed. 10, vol. 1, p. 108, Jan. 1, 1758.
[43] *E*[*ulabes*]. *javanus* Cuvier, Règne animal, ed. 2, vol. 1, p. 377, 1829. ("Java.")
[44] *E*[*ulabes*]. *indicus* Cuvier, Règne animal, ed. 2, vol. 1, p. 377, 1829. ("des Indes.")

north to the Malay Peninsula, Tenasserim, Borneo, and the Natuna Islands.

2. *Gracula religiosa baweana* Oberholser.

Gracula javanensis baweana Oberholser, Proc. U. S. Nat. Mus., vol. 52, p. 195, Feb. 8, 1917. ("Bawean Island, Java Sea.")

Geographic distribution.—Bawean Island.

3. *Gracula religiosa palawanensis* (Sharpe).

[*Mainatus javanensis*] Subsp. a. *Mainatus palawanensis* Sharpe, Catalogue of birds in the British Museum, vol. 13, p. 104, 1890 (after May 14). ("Palawan.")

Geographic distribution.—Palawan Island, Philippine Islands.

4. *Gracula religiosa prasiocara* Oberholser.

Gracula javana prasiocara Oberholser, U. S. Nat. Mus. Bull. 98, p. 55, June 30, 1917. ("Pulo Piling, Anamba Islands.")

Geographic distribution.—Anamba Islands and Tambelan Islands, South China Sea.

5. *Gracula religiosa enganensis* Salvadori.

Gracula enganensis Salvadori, Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, vol. 12, p. 137, 1892. ("Engano.")

Geographic distribution.—Island of Engano and the Mentawi Islands, Barussan Islands, western Sumatra.

6. *Gracula religiosa batuensis* Finsch.

Gracula batuensis Finsch, Notes Leyden Mus., vol. 21, nos. 1–3, p. 14, Dec., 1899. ("Batu-Inseln (Pulu Tello).")

Geographic distribution.—Batu Islands, Barussan Islands, western Sumatra.

7. *Gracula religiosa robusta* (Salvadori).

Gracula robusta Salvadori, Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, vol. 4, p. 554, pl. 9, fig. 2, May 20, 1887. ("G. Sitoli; Lelemboli; Ombalata" [Nias Island].)

Geographic distribution.—Nias Island, Barussan Islands, western Sumatra.

8. *Gracula religiosa ophellochlora* Oberholser.

Gracula javanensis ophellochlora Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 17, Oct. 26, 1912. ("Pulo Tuanku, Banjak Islands.")

Geographic distribution.—Banjak Islands and Pulo Babi, Barussan Islands, western Sumatra.

9. *Gracula religiosa miotera* Oberholser.

Gracula javanensis miotera Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 16, Oct. 26, 1912. ("Simalur Island.")

Geographic distribution.—Simalur Island, Barussan Islands, western Sumatra.

10. *Gracula religiosa andamanensis* (Beavan).

Eulabes andamanensis Beavan, Ibis, new [2d] ser., vol. 3, no. 11, p. 331, July, 1867, (Tytler MS.). ("Andaman Islands.")

Geographic distribution.—Andaman Islands.

11. *Gracula religiosa halibrecta* Oberholser.

Gracula javana halibrecta Oberholser, Journ. Washington Acad. Sci., vol. 16, no. 19, p. 516, Nov. 18, 1926. ("Little Nicobar Island, Nicobar Islands.")

Geographic distribution.—Nicobar Islands.

12. *Gracula religiosa intermedia* Hay.

[*Gracula*] *intermedius* Hay, Madras Journ. Lit. and Sci., vol. 13, pt. 2, no. 31, p. 157 (in text), for Dec., 1844 (after July, 1845). ("Northern India and Arracan," p. 154.)

Gracula dubia Schlegel, Nederlandsch Tijdschrift Dierkunde, vol. 1, Afd. 1, p. 7 (in text), pl. 1, fig. "7" [=6], 1863. (Locality unknown.)

Eulabes hainanus Swinhoe, Ibis, new [2d] ser., vol. 6, no. 23, p. 352, July, 1870. ("Hainan.")

Eulabes sinensis Swinhoe, Ibis, new [2d] ser., vol. 6, no. 23, p. 353, July, 1870. ("Southwestern China (Western Kwangtung, Kwangse, and so forth)".)

Geographic distribution.—Northern India, west to Kumaun; north to southern China and the island of Hainan; east to Cochin China; and south to Siam, Burma, and northern India.

LAMPROCORAX PANAYENSIS HETEROCHLORUS Oberholser

Lamprocorax panayensis heterochlorus Oberholser, U. S. Nat. Mus. Bull. 98, p. 57, June 30, 1917. ("Pulo Mobur, Anamba Islands.")

The form of this species found in the Natuna Islands is apparently the same as that of the bird from the Anamba Islands. The range of *Lamprocorax panayensis heterochlorus* therefore comprises the Anamba, Natuna, and Tambelan Islands.

Doctor Abbott obtained the following 5 specimens during his sojourn in the Natuna Islands:

Adult male, U.S.N.M. No. 174730, Pulo Laut, August 7, 1900.

Adult male, U.S.N.M. No. 174727, Pulo Midei, May 23, 1900.

Adult female, U.S.N.M. No. 174728, Pulo Midei, May 23, 1900.

Female in first nuptial plumage, U.S.N.M. No. 174726, Pulo Midei, May 23, 1900.

Juvenal female, U.S.N.M. No. 174729, Bunguran Island, July 24, 1900.

Only one of these shows any evidences of molt, the adult male, No. 174730, taken on August 7, which is in the midst of change of both wing quills and contour feathers. This indicates a rather later molting season for this species than prevails in some of the other birds of the Natuna Islands.

The juvenal plumage is very different from that of the adult, being dark brown above, including wings and tail, with very little metallic

sheen, and this confined principally to wings and tail; and dull white below, heavily streaked with the dark brown of the upper surface, with very little or no metallic sheen.

In what I take to be the first nuptial plumage the lower parts are still white, but the streaks are broader and nearly all metallic green, the upper parts, including the lesser and median wing coverts, are metallic green, though somewhat duller than in the adult; but the remaining portions of the wings are brown as in the juvenal dress.

Measurements are given in Table 33.

This species has been recorded by Doctor Hartert[45] from also Sirhassen Island.

TABLE 33.—*Measurements of specimens of* Lamprocorax panayensis heterochlorus

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174727	♂	Pulo Midei	May 23	W. L. Abbott	235	112	76	18.5	8	22.5	20
174730	♂	Pulo Laut	Aug. 7	do	229	106.5	69	18	8	23	19
Average of 2 males					232	109.3	72.5	18.3	8	22.8	19.5
174728	♀	Pulo Midei	May 23	W. L. Abbott		104.5	67	18	7	22	19
174726	♀ im.	do	do	do	213	102	63.5	15.5	7	21	18
174729	♀ juv.	Bunguran Island	July 14	do		100.5	54.5	15	6.5	21.5	18
Average of 3 females					213	102.3	65	16.2	6.8	21.5	18.3

[1] Measured in the flesh by the collector.

The number of recognizable races of *Lamprocorax panayensis* is now 20, as follows:

1. *Lamprocorax panayensis panayensis* (Scopoli).

Muscicapa panayensis SCOPOLI, Deliciae florae et faunae Insubricae, pt. 2, p. 96, 1786. ("Ibid. p. 115 Tab. 73" [=Sonnerat, Voyage Nouvelle Guinée= Panay Island, Philippine Islands].)

[*Turdus*] *columbinus* GMELIN, Systema naturae, vol. 1, pt. 2, p. 836, Apr. 20, 1789. ("in insulis Philippinis" [type locality now designated as Panay Island].)

[*Turdus*] *cantor* GMELIN, Systema naturae, vol. 1, pt. 2, p. 837, Apr. 20, 1789. ("in insulis Philippinis" [based on "Petit merle de l'île de Panay" Sonnerat; type locality, therefore, Panay Island].)

Geographic distribution.—Philippine Islands.

2. *Lamprocorax panayensis sanghirensis* (Salvadori).

Calornis sanghirensis SALVADORI, Ann. Mus. Civ. Stor. Nat. Genova, ser. 1, vol. 9, p. 60, Oct. 7, 1876. ("Petta, Isole Sanghir" [north of Celebes].)

Geographic distribution.—Sanghir Islands, north of Celebes.

[45] Nov. Zool., vol. 1, no. 2, p. 476, Apr. 16, 1894.

3. *Lamprocorax panayensis neglectus* (Walden).

Calornis neglecta Walden, Trans. Zool. Soc. London, vol. 8, pt. 2, p. 79, "May" [=June], 1872. ("Menado, Celebes.")

Geographic distribution.—Celebes.

4. *Lamprocorax panayensis sulaensis* (Sharpe).

Calornis sulaensis Sharpe, Catalogue of birds in the British Museum, vol. 13, p. 149, 1890, June–Aug. ("Sula Islands.")

Geographic distribution.—Sula Islands, east of Celebes.

5. *Lamprocorax panayensis alipodis* Oberholser.

Lamprocorax panayensis alipodis Oberholser, Journ. Washington Acad. Sci., vol. 16, no. 19, p. 516, Nov. 18, 1926. ("Pulo Pandigang, eastern Borneo.")

Aplonis panayensis suggrandis Bangs and Peters, Occas. Papers Boston Soc. Nat. Hist., vol. 5, p. 241, June 13, 1927. ("Maratua Island," eastern Borneo.)

Geographic distribution.—Islands off the coast of East Borneo.

6. *Lamprocorax panayensis eustathis* Oberholser.

Lamprocorax panayensis eustathis Oberholser, Journ. Washington Acad. Sci., vol. 16, no. 19, p. 516, Nov. 18, 1926. ("Kota Bangoen, eastern Borneo.")

Geographic distribution.—Borneo.

7. *Lamprocorax panayensis heterochlorus* Oberholser.

Lamprocorax panayensis heterochlorus Oberholser, U. S. Nat. Mus. Bull. 98, p. 57, June 30, 1917. ("Pulo Mobur, Anamba Islands.")

Geographic distribution.—Anamba, Natuna, and Tambelan Islands, in the South China Sea.

8. *Lamprocorax panayensis strigatus* (Horsfield).

Turdus strigatus Horsfield, Trans. Linn. Soc. London, ser. 1, vol. 13, pt. 1, p. 148, May, 1821. ("Java.")

Turdus chalybeus Horsfield, Trans. Linn. Soc. London, ser. 1, vol. 13, pt. 1, p. 148, May, 1821, ("Java.")

Geographic distribution.—Java.

9. *Lamprocorax panayensis gusti* (Stresemann).

Aplonis panayensis gusti Stresemann, Nov. Zool., vol. 20, no. 2, p. 375, June 17, 1913. ("Danau Bratan, Bali.")

Geographic distribution.—Island of Bali, east of Java.

10. *Lamprocorax panayensis insidiator* (Raffles).

Lanius Insidiator Raffles, Trans. Linn. Soc. London, vol. 13, pt. 2, p. 307, Nov. or Dec., 1822. ("Sumatra.")

Geographic distribution.—Islands of Sumatra, Banka, and Billiton.

11. *Lamprocorax panayensis enganensis* (Salvadori).

Calornis enganensis Salvadori, Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, vol. 12, p. 137, Feb. 6, 1892. ("Kifa-juc, e Bua-Bua"; "Engano.")

Geographic distribution.—Engano Island, Barussan Islands, western Sumatra.

12. *Lamprocorax panayensis pachistorhinus* Oberholser.

Lamprocorax chalybeus pachistorhinus Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 17, Oct. 26, 1912. ("South Pagi Island" [Barussan Islands].)

Geographic distribution.—Pagi Islands and Batu Islands in the Barussan Chain, western Sumatra.

13. *Lamprocorax panayensis leptorrhynchus* (Stresemann).

Aplonis panayensis leptorrhynchus Stresemann, Nov. Zool., vol. 20, no. 2, p. 377, June 17, 1913. ("Pini [Island], nordöstlich der Batu-Inseln" [Barussan Islands].)

Geographic distribution.—Pini Island, Barussan Islands.

14. *Lamprocorax panayensis altirostris* (Salvadori).

Calornis altirostris Salvadori, Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, vol. 4, p. 553, pl. 9, fig. 1, May 20, 1887. ("Lelemboli; G. Sitoli" [Nias Island].)

Geographic distribution.—Island of Nias, Barussan Islands.

15. *Lamprocorax panayensis nesodramus* Oberholser.

Lamprocorax panayensis nesodramus Oberholser, Journ. Washington Acad. Sci., vol. 16, no. 19, p. 516, Nov. 18, 1926. ("Pulo Babi, Barussan Islands, western Sumatra.")

Geographic distribution.—Babi Island, Barussan Islands, western Sumatra.

16. *Lamprocorax panayensis rhadinorhamphus* Oberholser.

Lamprocorax chalybeus rhadinorhamphus Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 17, Oct. 26, 1912. ("Simalur Island.")

Geographic distribution.—Simalur Island, Barussan Islands, western Sumatra.

17. *Lamprocorax panayensis richmondi* Oberholser.

Lamprocorax panayensis richmondi Oberholser, Proc. U. S. Nat. Mus., vol. 55, p. 272, Apr. 28, 1919. ("Pulo Taya.")

Geographic distribution.—Taya Island in Berhala Strait, eastern Sumatra.

18. *Lamprocorax panayensis halyctipus* Oberholser.

Lamprocorax panayensis halyctipus Oberholser, Journ. Washington Acad. Sci., vol. 16, no. 19, p. 516, Nov. 18, 1926. ("Telibon Island, Trang, Lower Siam.")

Geographic distribution.—Malay Peninsula north to Tenasserim.

19. *Lamprocorax panayensis affinis* (Blyth).

Calornis affinis Blyth, Journ. Asiatic Soc. Bengal, vol. 15, no. 169, new ser. no. 85, p. 36, for Jan., 1846 ("Hay MS."). ("Tipperah, Arracan, Tenasserim (?), and the Nicobar Islands.")

Geographic distribution.—Northeastern India and Burma; west to Dacca and Tipperah; north to the Khasi Hills; east to Cachar; and south to Arakan.

20. *Lamprocorax panayensis tytleri* (Hume).

Calornis Tytleri Hume, Stray Feathers, vol. 1, no. 6, p. 480, Dec., 1873. ("Andaman and Nicobar" [Islands].)

Geographic distribution.—Andaman Islands and Nicobar Islands.

Family DICRURIDAE

DISSEMURUS PARADISEUS ENDOMYCHUS, new subspecies

Subspecific characters.—Resembling *Dissemurus paradiseus brachyphorus* from Borneo, but wing and tail much longer; racket much larger; exposed culmen and tarsus somewhat longer.

Description.—Type, adult male, U.S.N.M. No. 174723, Pulo Lingung, near Bunguran Island, Natuna Islands, June 17, 1900; Dr. W. L. Abbott. Entirely brownish black, all the exposed part of the body plumage metallic greenish or bluish, the chin, throat, sides, and flanks less so, the latter two mixed with dark grayish; wings and tail somewhat less shiny brownish black; the rectrices and remiges with their outer webs mostly metallic greenish or bluish, the exposed surface of the upper wing coverts similar; lining of wing with a few small white spots.

The Natuna Islands *Dissemurus* may be distinguished from the bird of the Anamba Islands, *Dissemurus paradiseus microlophus*,[46] by the range of which it is most nearly approached on the west, by its much shorter racket; longer tail; and denser, more bushy frontal crest.

It differs from *Dissemurus paradiseus hypoballus* [47] of the Malay Peninsula in larger size, and particularly in its much shorter crest, which is also denser, stiffer, and more bristly.

I am indebted to C. Boden Kloss for information regarding the size of the racket in his *Dissemurus paradiseus banguey* [48] from Banguey Island, north Borneo, which shows that the Natuna form is not the same as that, differing in much larger racket.

The juvenal plumage of *Dissemurus paradiseus endomychus* much resembles that of its adult, except for lacking a good deal of the metallic sheen, particularly below, and possessing large white spots on the axillars and under wing coverts. The juvenal female (U.S.N.M. No. 174722), has obscure grayish edgings on the feathers of the posterior lower parts, and white tips on the under tail coverts. Juvenal specimens are also smaller than adults, as shown by the measurements here given. Doctor Abbott collected the following specimens:

Adult male (type), U.S.N.M. No. 174725, Pulo Lingung, near Bunguran Island, June 17, 1900.

Adult male, U.S.N.M. No. 174723, Pulo Lingung, near Bunguran Island, June 14, 1900. "Iris red."

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[46] Oberholser, U. S. Nat. Mus. Bull. 98, p. 59, June 30, 1917.

[47] Oberholser, Journ. Washington Acad. Sci., vol. 16, no. 19, p. 518, Nov. 18, 1926.

[48] Chasen and Kloss, Journ. f. Orn., Ergänzungsband 2, p. 120, Oct. 29, 1929.

Juvenal male, U.S.N.M. No. 174724, Pulo Lingung, near Bunguran Island, June 16, 1900. "Iris gray brown."

Juvenal female, U.S.N.M. No. 174722, Bunguran Island, June 22, 1900. "Iris red; bill and feet black."

All these individuals show some molting feathers among the wing quills and body plumage; and adult male No. 174723 is in the midst of the molt. Measurements are given in Table 34.

Doctor Abbott found this drongo common in the thick jungles on Bunguran Island.

TABLE 34.—*Measurements of specimens of* Dissemurus paradiseus endomychus

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Tail except outer feathers	Total culmen	Height of bill at base	Tarsus	Length of frontal crest	Length of racket	Greatest width of racket
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174723	♂	Pulo Lingung.[2]	June 14	W.L.Abbott.	330	154.5	-----	152.5	34	12.5	24.5	7.0	-----	-----
174725	♂	---do----	June 17	---do----	540	158.5	370.5	149.5	34.0	12.0	24.5	9.5	80.0	19.5
Average of 2 adult males					435	156.5	370.5	151	34	12.3	24.5	8.3	80.0	19.5
174724	♂[juv.]	Pulo Lingung.	June 16	W.L.Abbott.	-----	148.0	-----	-----	31.0	12.0	24.0	7.0	71.0	18.5
174722	♀[juv.]	Bunguran Island.	June 22	---do----	451	149.0	-----	-----	33.5	12.0	24.0	6.3	-----	-----

[1] Measured in the flesh by the collector. [2] Type.

The recognizable races of *Dissemurus paradiseus* now number 22, and are as follows:

1. *Dissemurus paradiseus paradiseus* (Linnaeus).

[*Cuculus*] *paradiseus* LINNAEUS, Systema naturae, ed. 12, vol. 1, p. 172, 1766 (after May 24). ("Siam.")

Geographic distribution.—Southern Tenasserim and southern Siam to French Indo-China.

2. *Dissemurus paradiseus johni* Hartert.

Dissemurus paradiseus johni HARTERT, Nov. Zool., vol. 9, no. 3, p. 579, Dec. 16, 1902 (in text). ("Five Finger Mts., Hainan.")

Geographic distribution.—Island of Hainan, China.

3. *Dissemurus paradiseus rangoonensis* (Gould).

Edolius Rangoonensis GOULD, Proc. Zool. Soc. London, vol. 4, p. "213" [=5], Apr. 9, 1836. ("Rangoon.")

Geographic distribution.—Central Burma to the southern Chin Hills, South Shan States, and northern Siam.

4. *Dissemurus paradiseus grandis* (Gould).

Edolius grandis GOULD, Proc. Zool. Soc. London, vol. 4, p. "213" [=5], Apr. 9, 1836. ("Nepalia et (verosimiliter) in Sumatra.")

Geographic distribution.—Northeastern India, north to Assam and Nepal; west to Khandesh; south to the Godavari River, Orissa, and the North Shan States; and east to Yunnan, China.

5. *Dissemurus paradiseus malabaricus* (Latham).

Lanius malabaricus LATHAM, Index ornithologicus, vol. 1, p. 66, 1790. ("Malabaria.")

Geographic distribution.—Indian Peninsula south of the Godavari River.

6. *Dissemurus paradiseus ceylonensis* Sharpe.

D[issemurus]. ceylonensis SHARPE, Catalogue of birds in the British Museum, vol. 3, p. 264 (in text), July 24, 1877. ("Ceylon.")

Geographic distribution.—Island of Ceylon.

7. *Dissemurus paradiseus nicobariensis* Baker.

Dissemurus paradiseus nicobariensis BAKER, Nov. Zool., vol. 25, no. 1, p. 302, May 1, 1918. ("Kondel [Island], Nicobars.")

Geographic distribution.—Nicobar Islands.

8. *Dissemurus paradiseus otiosus* Richmond.

Dissemurus malabaricus otiosus RICHMOND, Proc. U. S. Nat. Mus., vol. 25, p. 290, Sept. 17, 1902. ("Lawrence Island and Little Andaman.") (New name for *Edolius affinis* Beavan, nec *Edolius affinis* Blyth.)

Geographic distribution.—Andaman Islands.

9. *Dissemurus paradiseus mallomicrus* Oberholser.

Dissemurus paradiseus mallomicrus OBERHOLSER, Journ. Washington Acad. Sci., vol. 16, no. 19, p. 518, Nov. 18, 1926. ("Hastings Island, Mergui Archipelago," off Malay Peninsula.)

Geographic distribution.—Mergui Archipelago.

10. *Dissemurus paradiseus hypoballus* Oberholser.

Dissemurus paradiseus hypoballus OBERHOLSER, Journ. Washington Acad. Sci., vol. 16, no. 19, p. 518, Nov. 18, 1926. ("Prahmon, Trang, Lower [Peninsular] Siam.") (New name for *Dissemurus setifer* of authors, *nec* Temminck.)

Geographic distribution.—Malay Peninsula south of Tenasserim, including the coastal islands (except Singapore).

11. *Dissemurus paradiseus messatius* Oberholser.

Dissemurus paradiseus messatius OBERHOLSER, Journ. Washington Acad. Sci., vol. 16, no. 19, p. 519, Nov. 18, 1926. ("Sclitar, 9 miles from the town of Singapore, Singapore Island, Federated Malay States.")

Geographic distribution.—Island of Singapore, Federated Malay States.

12. *Dissemurus paradiseus siakensis* Oberholser.

Dissemurus paradiseus siakensis OBERHOLSER, Journ. Washington Acad. Sci., vol. 16, no. 19, p. 519, Nov. 18, 1926. ("Siak River, eastern Sumatra.")

Geographic distribution.—Eastern region of Sumatra, including the mainland coast, Great Karimon Island, Pulo Rapat (probably also neighboring islands), and the island of Banka.

13. *Dissemurus paradiseus colpiotes* Oberholser.

Dissemurus paradiseus colpiotes Oberholser, Journ. Washington Acad. Sci., vol. 16, no. 19, p. 520, Nov. 18, 1926. ("Loh Sidoh Bay, northwestern Sumatra.")

Geographic distribution.—Mainland of western Sumatra.

14. *Dissemurus paradiseus olizurus* Oberholser.

Dissemurus paradiseus olizurus Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 15, Oct. 26, 1912. ("Simalur Island;" Barussan Islands, western Sumatra.)

Geographic distribution.—Simalur Island, Barussan Islands.

15. *Dissemurus paradiseus pachistus* Oberholser.

Dissemurus paradiseus pachistus Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 16, Oct. 26, 1912. ("Pulo Lasia," Barussan Islands.)

Geographic distribution.—Pulo Lasia, Barussan Islands.

16. *Dissemurus paradiseus elassopterus* Oberholser.

Dissemurus paradiseus elassopterus Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 16, Oct. 26, 1912. ("Pulo Babi," Barussan Islands.)

Geographic distribution.—Pulo Babi, Barussan Islands.

17. *Dissemurus paradiseus adelphus* Oberholser.

Dissemurus paradiseus adelphus Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 15, Oct. 26, 1912. ("Telawoa, Nias Island," Barussan Islands.)

Geographic distribution.—Nias Island, Barussan Islands.

18. *Dissemurus paradiseus formosus* Cabanis.

D[issemurus]. formosus Cabanis, Museum Heineanum, Theil 1, p. 111, 1851, after Oct. 23. ("Java [Barta].")

Geographic distribution.—Java.

19. *Dissemurus paradiseus brachyphorus* (Bonaparte).

E[dolius]. brachyphorus Bonaparte, Conspectus generum avium, vol. 1, pt. 1, p. 351, June 24, 1850. ("Borneo.")

Geographic distribution.—Borneo, with most of its coastal islands, including Pulo Laut.

20. *Dissemurus paradiseus banguey* Chasen and Kloss.

Dissemurus paradiseus banguey Chasen and Kloss, Journ. f. Orn., Ergänzungsband 2, p. 120, Oct. 29, 1929 ("Banguey Island, North Borneo.")

Geographic distribution.—Banguey Island and Balambangan Island, North Borneo.

21. *Dissemurus paradiseus endomychus* Oberholser.

Dissemurus paradiseus endomychus Oberholser, antea, p. 98.

Geographic distribution.—Natuna Islands and Pulo Tioman, South China Sea.

22. *Dissemurus paradiseus microlophus* Oberholser.

Dissemurus paradiseus microlophus Oberholser, U. S. Nat. Mus. Bull. 98, p. 59, June 30, 1917. ("Pulo Jimaja, Anamba Islands.")

Geographic distribution.—Anamba Islands, South China Sea.

Family CAMPEPHAGIDAE

GRAUCALUS SUMATRENSIS BUNGURENSIS Hartert

Graucalus bungurensis Hartert, Nov. Zool., vol. 1, no. 2, p. 477, Apr. 16, 1894. ("Bunguran" [Island, Natuna Islands].)

One adult male, U.S.N.M. No. 174731, is from Bunguran Island, and was taken on July 14, 1900. "Iris pale greenish yellow; bill and feet black." Length in flesh, 292 mm. Both quills of wings and tail and the contour feathers are in process of molt. This bird measures: Wing, 169 mm.; tail, 112; exposed culmen, 7; height of bill at base, 13; tarsus, 25.5; middle toe without claw, 20.5.

The generic name *Coracina* Vieillot,[49] which several authors have recently used for this group, while applicable, is preoccupied by *Coracinus* Gronovius, 1763, for a genus of fishes. The next available name is *Graucalus* Cuvier,[50] which has the same type as *Coracina*, and this apparently is the proper name for this group of cuckoo shrikes. The species, including *Graucalus sumatrensis*, that have been sometimes segregated as another genus under the name *Artamides* Hartlaub,[51] do not apparently possess any trenchant structural characters to distinguish them from the typical species of *Graucalus*, and unless such can be discovered they must needs be included in *Graucalus*.

The 13 recognizable subspecies of *Graucalus sumatrensis* are as follows:

1. *Graucalus sumatrensis sumatrensis* (Müller).

Cebl[epyris]. sumatrensis S. Müller, Verhandelingen over de Natuurlijke Geschiedenis der Nederlandsche overzeeische Bezittingen, vol. 1, Land-en Volkenkunde, p. 190 (in text), 1843. ("Sumatra.")

G[raucalus]. concretus Hartlaub, Journ. f. Orn., Jahrg. 12, no. 6, p. 445, Nov. 1864 (June, 1865). ("Borneo.")

Geographic distribution.—Sumatra and Borneo.

2. *Graucalus sumatrensis enganensis* Salvadori.

Graucalus enganensis Salvadori, Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, vol. 12, p. 129, Feb. 6, 1892. ("Kifa-jue; Bua Bua; Engano.")

Geographic distribution.—Engano Island, Barussan Islands, western Sumatra.

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[49] Analyse d'une nouvelle ornithologie élémentaire, p. 37, Apr. 14, 1816. (Type by subsequent designation [Cabanis, Museum Heineanum, vol. 1, p. 62, 1851, after Oct. 23], *Corvus papuensis* Gmelin.)

[50] Règne animal, vol. 1, p. 341, Dec. 7, 1816.

[51] Journ. f. Orn., Jahrg. 13, no. 75, p. 170, May, 1865. (Type by monotypy, *Ceblepyris bicolor* Temminck).

3. *Graucalus sumatrensis halistephis* (Oberholser).

Artamides sumatrensis halistephis Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 14, Oct. 26, 1912. ("South Pagi Islands.")

Geographic distribution.—Pagi Islands, Barussan Islands, western Sumatra.

4. *Graucalus sumatrensis crissalis* Salvadori.

Graucalus crissalis Salvadori, Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, vol. 14, p. 592, Nov. 12, 1894. ("Si Oban, Sipora [Island], Isole Mentawei.")

Geographic distribution.—Mentawi group, Barussan Islands, western Sumatra.

5. *Graucalus sumatrensis kannegieteri* (Büttikofer).

Artamides Kannegieteri Büttikofer, Notes Leyden Mus., vol. 18, nos. 2, 3, Note 21, p. 175, Dec. 24, 1896. ("Lahagoe, Nias.")

Geographic distribution.—Nias Island, Barussan Islands, western Sumatra.

6. *Graucalus sumatrensis babiensis* Richmond.

Graucalus babiensis Richmond, Proc. U. S. Nat. Mus., vol. 26, p. 513, Feb. 4, 1903. ("Pulo Babi, west coast of Sumatra.")

Geographic distribution.—Island of Babi, Barussan Islands, western Sumatra.

7. *Graucalus sumatrensis simalurensis* Richmond.

Graucalus simalurensis Richmond, Proc. U. S. Nat. Mus., vol. 26, p. 513, Feb. 4, 1903. ("Simalur Island, west coast of Sumatra.")

Geographic distribution.—Simalur Island, Barussan Islands, western Sumatra.

8. *Graucalus sumatrensis nesiarchus* (Oberholser).

Artamides sumatrensis nesiarchus Oberholser, Journ. Washington Acad. Sci., vol. 18, no. 19, p. 517, Nov. 18, 1926. ("Pulo Parit, near Karimon Island, eastern Sumatra.")

Geographic distribution.—Islands between Sumatra and the Malay Peninsula.

9. *Graucalus sumatrensis messeris* (Oberholser).

Artamides sumatrensis messeris Oberholser, Journ. Washington Acad. Sci., vol. 18, no. 19, p. 517, Nov. 18, 1926. ("Trang, Lower Siam.")

Geographic distribution.—Malay Peninsula.

10. *Graucalus sumatrensis calipolius* (Oberholser).

Artamides sumatrensis calipolius Oberholser, U. S. Nat. Mus. Bull. no. 98, p. 34, June 30, 1917. ("Pulo Mata, Anamba Islands.")

Geographic distribution.—Anamba Islands, South China Sea.

11. *Graucalus sumatrensis bungurensis* Hartert.

Graucalus bungurensis Hartert, Nov. Zool., vol. 1, no. 2, p. 477, Apr. 16, 1894. ("Bunguran.")

Geographic distribution.—Natuna Islands, South China Sea.

12. *Graucalus sumatrensis difficilis* Hartert.

Graucalus sumatrensis difficilis Hartert, Nov. Zool., vol. 2, no. 3, p. 470, Aug. 17, 1895. ("Balabac.")

Geographic distribution.—Balabac and Palawan Islands, Philippine Islands.

13. *Graucalus sumatrensis vordermani* Hartert.

Graucalus vordermani Hartert, Bull. Brit. Orn. Club, vol. 12, no. 84, p. 32, Dec. 30, 1901. ("Kangean Island.")

Geographic distribution.—Kangean Islands, Java Sea.

Family NECTARINIIDAE

ARACHNOTHERA LONGIROSTRA ATITA, new subspecies

Subspecific characters.—Similar to *Arachnothera longirostra rothschildi*, from Bunguran Island, Natuna Islands, but bill decidedly longer, wing and tail slightly so; upper surface somewhat lighter, and much more yellowish or bronzy (less greenish); yellow of posterior lower parts deeper, brighter, and more golden (less greenish).

Description.—Type, adult male, U.S.N.M. No. 174846, Sirhassen Island, Natuna Islands, June 5, 1900; Dr. W. L. Abbott. Crown fuscous, the feathers narrowly edged with dark citrine; occiput and cervix dark citrine; interscapulum and rump, between orange-citrine and dark citrine; upper tail coverts rather yellowish dark citrine; tail rather dark fuscous, the rectrices margined basally with dark citrine, and tipped on inner webs with rather dull white, this broadest on exterior feathers and almost obsolete on middle pair; wings rather light fuscous, the secondaries and tertials broadly, the primaries narrowly, margined on outer webs with the greenish orange-citrine of the interscapulum; the lesser wing coverts very broadly, the median, greater, and primary series narrowly, edged with dark citrine; lores and subocular streak, dull grayish white; auriculars pale olive grayish; broad rictal streak, dark grayish olive; supra-auricular region and sides of neck, dark citrine, shading posteriorly toward orange-citrine; chin, throat, and jugulum, dull olivaceous white, the jugulum washed with pale yellow; breast, sides, and abdomen, lemon chrome; crissum and thighs, baryta yellow; small tuft on each side of breast, orange; lining of wing dull white, more or less washed with pale lemon yellow; "upper mandible black; lower mandible leaden; feet leaden blue."

Notwithstanding its intermediate geographical range between *Arachnothera longirostra rothschildi* of Bunguran Island and *Arachnothera longirostra büttikoferi* of Borneo, the present race is readily distinguishable from either. It differs from the latter in the paler, brighter, less greenish washed, and on the breast and crissum less extensive, yellow of posterior lower surface; lighter, somewhat more bronzy (or yellowish) upperparts; and somewhat shorter bill. It is one of the few species represented in the Natuna Islands by two races.

Although we have seen specimens of this subspecies from only Sirhassen Island, it probably occurs on other southern islands of the Natuna group.

Doctor Abbott obtained the two following examples:

Adult male (type), U.S.N.M. No. 174846, Sirhassen Island, June 5, 1900.

Adult female, U.S.N.M. No. 174845, Sirhassen Island, June 5, 1900. "Feet leaden blue."

Doctor Abbott reported it common in the thick jungle on Sirhassen Island. The specimens collected show no indication of molt.

Measurements are given in Table 35.

TABLE 35.—*Measurements of specimens of* Arachnothera longirostra atita

U.S.N.M. No.	Sex.	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174846..	♂	Sirhassen Island [2].....	June 5	W. L. Abbott	165	66. 5	42. 5	38. 5	5	16. 5	11
174845..	♀	.....do.....	...do....	.....do.....	146	61	37. 5	35. 5	5. 5	15	10

[1] Measured in the flesh by the collector. [2] Type.

ARACHNOTHERA LONGIROSTRA ROTHSCHILDI van Oort

Arachnothera longirostra rothschildi VAN OORT, Notes Leyden Mus., vol. 32, no. 4, p. 195, Dec. 30, 1910. ["Natoena Islands (Boengoeran)."]

Four specimens were obtained by Doctor Abbott:

Adult male, U.S.N.M. No. 174844, Pulo Lingung, near Bunguran Island, June 16, 1900. "Feet leaden blue." Length in flesh, 152 mm.

Juvenal male, U.S.N.M. No. 174841, Bunguran Island, July 3, 1900. "Feet leaden blue; upper mandible black; lower mandible dark horn brown, at tip brownish, pale greenish leaden toward base." Length in flesh, 156 mm.

Adult male, U.S.N.M. No. 174842, Bunguran Island, July 18, 1900. Length in flesh, 152 mm.

Juvenal male, U.S.N.M. No. 174843, Bunguran Island, July 22, 1900. Length in flesh, 152 mm.

All these examples show more or less evidences of molt—the adults in both quills of wings and tail and in contour feathers; but the juveniles only in the contour feathers. The two juvenal males differ very little in coloration from the adults, and chiefly in the slightly darker more greenish shade of the upper surface. All our birds bear out the distinguishing characteristics of *Arachnothera longirostra rothschildi.*

Measurements are given in Table 36.

TABLE 36.—*Measurements of specimens of* Arachnothera longirostra rothschildi

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174844	♂	Pulo Lingung	June 16	W. L. Abbott	152	66	41.5	33.5	5.5	16.5	10.5
174841	♂ juv.	Bunguran Island	July 3	do	156	63.5	41.5	33	5	15.5	10
174842	♂	do	July 18	do	152	63.5	40.5	34.5	5	15.5	10
174843	♂ juv.	do	July 22	do	152	63	39	-----	5	15.5	10

[1] Measured in the flesh by the collector.

The recognizable races of *Arachnothera longirostra* now number 12, as follows:

1. *Arachnothera longirostra longirostra* (Latham).

Certhia longirostra LATHAM, Index ornithologicus, vol. 1, p. 299, 1790. ("Bengala.")

Geographic distribution.—Southern and eastern India and Assam, south through Burma to central Tenasserim.

2. *Arachnothera longirostra antelia* Oberholser.

Arachnothera longirostra antelia OBERHOLSER, Journ. Washington Acad. Sci., vol. 13, no. 11, p. 227, June 4, 1923. ("Trang, Lower Siam.")

Geographic distribution.—Malay Peninsula north to southern Tenasserim.

3. *Arachnothera longirostra heliocrita* Oberholser.

Arachnothera longirostra heliocrita OBERHOLSER, Journ. Washington Acad. Sci., vol. 13, no. 11, p. 228, June 4, 1923. ("Selitar, 9 miles from the town of Singapore, Singapore Island, Federated Malay States.")

Geographic distribution.—Island of Singapore.

4. *Arachnothera longirostra melanchima* Oberholser.

Arachnothera longirostra melanchima OBERHOLSER, Smithsonian Misc. Coll., vol. 60, no. 7, p. 19, Oct. 26, 1912. ("Upper Siak River, eastern Sumatra.")

Geographic distribution.—Sumatra.

5. *Arachnothera longirostra zarhina* Oberholser.

Arachnothera longirostra zarhina OBERHOLSER, Smithsonian Misc. Coll., vol. 60, no. 7, p. 19, Oct. 26, 1912. ("Pulo Bangkaru, Banjak Islands.")

Geographic distribution.—Banjak Islands, Barussan Islands, western Sumatra.

6. *Arachnothera longirostra niasensis* van Oort.

Arachnothera longirostra niasensis VAN OORT, Notes Leyden Mus., vol. 32, no. 4, p. 195 (in text), Dec. 30, 1910. ("Nias.")

Geographic distribution.—Nias Island, Barussan Islands, western Sumatra.

7. *Arachnothera longirostra hypochra* Oberholser.

Arachnothera longirostra hypochra Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 19, Oct. 26, 1912. ("North Pagi Island.")

Geographic distribution.—North Pagi Island, Barussan Islands, western Sumatra.

8. *Arachnothera longirostra exochra* Oberholser.

Arachnothera longirostra exochra Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 19, Oct. 26, 1912. ("South Pagi Island.")

Geographic distribution.—South Pagi Island, Barussan Islands, western Sumatra.

9. *Arachnothera longirostra prillwitzi* Hartert.

Arachnothera longirostris prillwitzi Hartert, Nov. Zool., vol. 8, no. 1, p. 51, Feb. 25, 1901. ("Mount Gedeh, Java.")

Geographic distribution.—Java.

10. *Arachnothera longirostra büttikoferi* van Oort.

Arachnothera longirostra büttikoferi van Oort, Notes Leyden Mus., vol. 32, no. 4, p. 195 (in text), Dec. 30, 1910. ("Borneo.")

Geographic distribution.—Borneo.

11. *Arachnothera longirostra atita* Oberholser.

Arachnothera longirostra atita Oberholser, antea, p. 104.

Geographic distribution.—Southern islands of the Natuna Islands, South China Sea.

12. *Arachnothera longirostra rothschildi* van Oort.

Arachnothera longirostra rothschildi van Oort, Notes Leyden Mus., vol. 32, no. 4, p. 195 (in text), Dec. 30, 1910. ("Natoena Islands, Boengoeran" [Island]).

Geographic distribution.—Northern islands of the Natuna Islands.

ANTHREPTES SIMPLEX EUTHAPSINUS, new subspecies

Subspecific characters.—Resembling *Anthreptes simplex frontalis* Blyth,[52] from the Malay Peninsula, but larger; upperparts lighter, and of a more golden shade; lower surface paler, with the middle of abdomen more clearly yellow.

Description.—Type, adult female, U.S.N.M. No. 174863, Bunguran Island, Natuna Islands, July 22, 1900; Dr. W. L. Abbott. Upper surface bright citrine, the crown, rump, and upper tail coverts, more greenish, near warbler green, the cervix grayish; tail Saccardo's olive, the outer webs of the feathers citrine; wings rather dark hair brown, the edges of the quills and the exposed portions of the upper coverts citrine, lesser coverts more greenish, near warbler green, and the short tertials Saccardo's olive, the inner edges of all the quills creamy white; sides of head rather light grayish olive; sides of neck

[52] *Nect[arinia]. (v. Anthreptes) frontalis* Blyth, Journ. Asiatic Soc Bengal, vol. 14, pt. 2, no. 164 (new ser. no. 80), p. 558, "August," 1845. ("Singapore.")

anteriorly the same, posteriorly citrine; chin colonial buff; throat, breast, sides, and flanks, dull light olive-gray washed with yellowish, more so posteriorly; abdomen, crissum, and center of breast, reed yellow; thighs pale olive-gray much washed with reed yellow; lining of wing anteriorly marguerite yellow, posteriorly white, the edges of the wings tinged with olivaceous. "Iris brownish red."

Measurements of type.—Total length (in flesh), 130 mm.; wing, 63; tail, 48; exposed culmen, 14; height of bill at base, 4; tarsus, 14; middle toe without claw, 9.5.

Though we have seen but a single specimen of this species of sunbird from the Natuna Islands, this bird is so consistently different from the other races that we have little hesitancy in separating it subspecifically. It may be distinguished from both *Anthreptes simplex simplicior* Oberholser[53] of Borneo, and *Anthreptes simplex simplex*, of Sumatra, by larger size, lighter, more golden upper surface, and paler lowerparts with the middle of abdomen more clearly yellow.

The races of *Anthreptes simplex* now number 4, as outlined below:

1. *Anthreptes simplex simplex* (Müller).

Nectarinia simplex S. Müller, Verhandelingen over de Natuurlijke Geschiedenis der Nederlandsche overzeeische Bezittingen, vol. 1, Land-en Volkenkunde, p. 173 (footnote), 1843, ("Sumatra en Borneo" [type locality, Sumatra]).

Geographic distribution.—Sumatra.

2. *Anthreptes simplex simplicior* Oberholser.

Anthreptes simplex simplicior Oberholser, Journ. Washington Acad. Sci., vol. 13, no. 11, p. 229, June 4, 1923. ("Central Borneo.")

Geographic distribution.—Borneo.

3. *Anthreptes simplex euthapsinus* Oberholser.

Anthreptes simplex euthapsinus Oberholser, antea, p. 107.

Geographic distribution.—Natuna Islands.

4. *Anthreptes simplex frontalis* (Blyth).

Nect[arinia]. (v. Anthreptes) frontalis Blyth, Journ. Asiatic Soc. Bengal, vol. 14, pt. 2, no. 164 (new ser. no. 80) p. 558, "August," 1845. ("Singapore.")

Geographic distribution.—Singapore, and Malay Peninsula to Siam and Burma.

*ANTHREPTES HYPOGRAMMICUS HYPOGRAMMICUS (Müller)

Nectarinia hypogrammica S. Müller, Verhandelingen over de Natuurlijke Geschiedenis Nederlandsche overzeeische Bezittingen, vol. 1, Land-en Volkenkunde, p. 173, footnote, 1843. ("Sumatra en Borneo"; type locality designated as Sumatra by Hartert, Bull. Brit. Orn. Club, vol. 38, no. 229, p. 27, Dec. 29, 1917).

Recorded by Doctor Hartert[54] from Bunguran Island.

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[53] Journ. Washington Acad. Sci., vol. 13, no. 11, p. 229, June 4, 1923.

[54] Nov. Zool., vol. 1, no. 2, p. 474, Apr. 16, 1894.

ANTHREPTES MALACENSIS ERIXANTHUS, new subspecies

Subspecific characters.—Resembling *Anthreptes malacensis bornensis*, from Borneo, but somewhat larger; in the male with yellow of posterior lower parts lighter, and flanks and crissum usually more grayish; in the female with the upper surface lighter and more yellowish, throat more yellowish (less grayish or olivaceous), and the remaining lower parts darker, medially rather more golden yellow.

Description.—Adult female, U.S.N.M. No. 174851; Bunguran Island, Natuna Islands, June 25, 1900; Dr. W. L. Abbott. Anterior upperparts dull light warbler green, much mixed and shaded with hair brown on pileum and mouse gray on back, rump and upper tail coverts, warbler green; wings and tail, fuscous, the tail basally edged with warbler green; the wing quills, and greater and median wing coverts, edged with citrine, the lesser coverts with warbler green verging toward citrine; sides of head and of neck dark citrine drab washed with yellowish; the lores and a very short narrow line over the eye, and another under the eye, paler and nearly yellowish white; chin and throat between citron yellow and amber yellow; jugulum between wax yellow and olive-ocher; middle of breast wax yellow, the middle of lower abdomen paler, and together with the crissum, rather dull citron yellow; sides and flanks, dull yellow shaded with pale grayish; lining of wing dull white, washed anteriorly with barium yellow; edge of wing amber yellow.

This Natuna Islands race seems to be even more like *Anthreptes malacensis baweanus* from Bawean Island in the Java Sea, than like the Bornean form. From the Bawean Island bird it may, however, be distinguished by the darker and duller upper surface, more golden middle of the breast, and duller, laterally more olivaceous washed, lower parts of the female; and the rather more grayish flanks and crissum of the male.

Doctor Abbott's collection contains 7 specimens of this sunbird, as follows:

Adult male, U.S.N.M. No. 174849, Brian Island, near Sirhassen Island, May 31, 1900.

Adult male, U.S.N.M. No. 174848, Bunguran Island, June 22, 1900. "Iris red."

Adult male, U.S.N.M. No. 174847, Sirhassen Island, June 6, 1900.

Adult female (type), U.S.N.M. No. 174851, Sirhassen Island, June 1, 1900.

Female in first autumn plumage, U.S.N.M. No. 174852, Bunguran Island, June 25, 1900.

Juvenal female, U.S.N.M. No. 174854, Bunguran Island, July 24, 1900.

Juvenal female, U.S.N.M. No. 174853, Bunguran Island, July 18, 1900.

The juvenal female differs from the adult of the same sex chiefly in its more yellowish upperparts, sides of the head and of the neck.

Of the above listed specimens, No. 174847, taken on June 6, is in the midst of the molt of tail, wings, and body feathers; No. 174849, taken on May 31, is molting some of the quill feathers; No. 174852, taken on June 25, some of the wing quills and contour feathers; and No. 174854, juvenal, taken on July 24, has just begun to renew its body plumage. The other examples show apparently no evidences of feather change.

Measurements of all these are given in Table 37.

TABLE 37.—*Measurements of specimens of* Anthreptes malacensis crixanthus

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174848	♂	Bunguran Island	June 22	W. L. Abbott	140	67	43	17.5	4.5	17	11
174849	♂	Brian Island, near Sirhassen Island.	May 31	do	143	68.5	47	17.5	4.5	17	11
174847	♂	Sirhassen Island	June 6	do	143	71.5	47.5	18.5	5	17.5	10
Average of 3 males					142	69	45.8	17.8	4.7	17.2	10.7
174852	♀	Bunguran Island	June 25	do	-----	62.5	42	16	4.5	16.5	10.5
174853	♀ juv.	do	July 18	do	-----	63	39.5	15	4.5	16.5	10.5
174854	♀ juv.	do	July 24	do	-----	60.5	38	14	4.5	16	10.5
174851	♀	Sirhassen Island [2]	June 1	do	133	66.5	43	16.5	4	16	10.5
Average of 4 females					133	63.1	40.6	15.4	4.4	16.3	10.5

[1] Measured in the flesh by the collector. [2] Type.

Doctor Hartert has recorded [55] this species, probably the present race, from Pulo Panjang and Pulo Pandak, as well as from Bunguran Island.

CHALCOSTETHA CALCOSTETHA HALITYPA, new subspecies

Subspecific characters.—Similar to *Chalcostetha calcostetha calcostetha* from the Malay Peninsula, but, in the male, with posterior upper parts mostly green (instead of strongly violet); in the female, with upper surface averaging more grayish (less greenish), lower parts posteriorly paler, duller, and usually of a somewhat more golden yellow, and anteriorly of a little lighter gray.

Description.—Type, adult male, U.S.N.M. No. 174856, Brian Island, near Sirhassen Island, Natuna Islands, May 31, 1900; Dr. W. L. Abbott. Pileum metallic dark yellowish green; hind neck and upper back, velvety black; lower back and rump, metallic cossack green slightly mixed with dull pansy violet and hyacinth violet; tail somewhat metallic dusky slate blue varying to dusky violet-blue (2),

[55] Nov. Zool., vol. 2, no. 3, p. 468, Aug. 17, 1895.

basally margined externally with blackish violet; wings terminally fuscous, passing to between fuscous and fuscous-black basally, and with a purplish or bluish sheen, primary coverts somewhat shiny dusky violet, greater coverts margined with the same, the remaining upper wing coverts metallic green like the rump, slightly mixed with purple; sides of head and of neck black; middle of throat metallic pompeian red; breast and sides of throat metallic raisin purple somewhat mixed with metallic hyacinth blue; a small tuft on each side of the breast lemon chrome; abdomen, sides, and flanks, black with blue and purple gloss; crissum dull black; lining of wing fuscous black, mixed with fuscous and with some purplish gloss.

The specimens obtained by Doctor Abbott are:

Adult male (type), U.S.N.M. No. 174856, Brian Island, near Sirhassen Island, May 31, 1900. Length in flesh, 143 mm.

Adult female, U.S.N.M. No. 174857, Brian Island, near Sirhassen Island, May 31, 1900.

Although Doctor Abbott sent only these two examples from the Natuna Islands, they show the same characters for subspecific separation as do the birds of a large series from Borneo, when compared with a good series of the typical race from the Malay Peninsula, Sumatra, and Java. The geographical distribution of this new subspecies includes the Natuna Islands, Borneo, and at least the islands along the eastern coast of Borneo. Doctor Hartert has recorded it [56] from Bunguran Island, under the name *Chalcostetha insignis*.

Measurements are given in Table 38.

TABLE 38.—*Measurements of specimens of* Chalcostetha calcostetha halitypa

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length[1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174856	♂	Brian Island [2]	May 31	W. L. Abbott	143	63	54	17	3.5	15	10
174857	♀	do	do	do	-----	58.5	45	19.5	3	-----	-----

[1] Measured in the flesh by the collector. [2] Type.

There seem to be now 4 recognizable subspecies of *Chalcostetha calcostetha*, as follows:

1. *Chalcostetha calcostetha calcostetha* (Jardine).

Nectarinia calcostetha JARDINE, Natural history of the Nectariniadae, or sunbirds, p. 263, 1843. ("E. Ind. Islands" [type locality now designated as Java].)

Nectarinia insignis JARDINE, Natural history of the Nectariniadae, p. 274, 1843. ("Java.")

[56] Nov. Zool., vol. 2, no. 3, p. 468, Aug. 17, 1895.

Geographic distribution.—Java, Sumatra, Malay Peninsula to Tenasserim, Siam, and Cochin China.

2. *Chalcostetha calcostetha halitypa* Oberholser.

Chalcostetha calcostetha halitypa Oberholser, antea, p. 110.

Geographic distribution.—Natuna Islands to Borneo and (?) Celebes.

3. *Chalcostetha calcosthitha pagicola* Oberholser.

Chalcostetha calcostetha pagicola Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 17, Oct. 26, 1912. ("North Pagi Island.")

Geographic distribution.—Pagi Islands, western Sumatra.

4. *Chalcostetha calcostetha heliomarpta* Oberholser.

Chalcostetha calcostetha heliomarpta Oberholser, Journ. Washington Acad. Sci., vol. 13, no. 11, p. 229, June 4, 1923. ("Simalur Island, western Sumatra.")

Geographic distribution.—Simalur Island, western Sumatra.

*CHALCOPARIA SINGALENSIS BORNEANA Kloss

Chalcoparia singalensis borneana Kloss, Journ. Federated Malay States Mus., vol. 10, pt. 3, p. 209, June, 1921. ("Bukar, Sumarahan, Sarawak.")

This species has been recorded by Doctor Hartert [57] from Bunguran Island. It is apparently referable to the Bornean race, though we have examined no specimens.

CINNYRIS ORNATA ZAPEGA, new subspecies

Subspecific characters.—Resembling *Cinnyris ornata ornata*,[58] from Java, but upper parts (of male) duller, much less yellowish (more brownish or olivaceous).

Description.—Type, adult male, U.S.N.M. No. 174865, Pulo Subi, Natuna Islands, June 13, 1900; Dr. W. L. Abbott. Sinciput shining metallic bluish black; rest of upper surface citrine,[59] somewhat brighter and more yellowish posteriorly; tail black with a metallic blue sheen, the three outer pairs of rectrices tipped with white, very broadly on outer pair, less so on the other two pairs; wings fuscous, broad tips of the lesser coverts, together with narrow exterior margins of median and greater coverts, tertials, secondaries, and inner primaries, citrine; cheeks, chin, middle of throat, and jugulum, shining metallic raisin black; sides of throat and jugulum, shining metallic dark delft blue; lores black; postocular region and sides of neck, citrine; breast and abdomen, gamboge yellow, a few flecks of bay just where this yellow joins the raisin black of the jugulum; tufts on sides of breast cadmium yellow; sides and thighs washed with olivaceous; crissum empire yellow; lining of wing white, washed with pinard yellow.

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[57] Nov. Zool., vol. 1, no. 2, p. 475, Apr. 16, 1894.

[58] *Cinnyris ornatus* Lesson, Dictionnaire des sciences naturelles, vol. 50, p. 15, Nov., 1827. (Type locality, Java.)

[59] In this specimen the anterior upper parts are considerably dulled by wear.

The two specimens collected by Doctor Abbott are:

Adult male (type), U.S.N.M. No. 174865, Pulo Subi, June 13, 1900.

Adult male, U.S.N.M. No. 174864, Pulo Seraia, May 28, 1900.

Doctor Abbott found this to be the commonest sunbird on Pulo Subi. It has been recorded, as *Cinnyris pectoralis*, by Doctor Hartert [60] from Sirhassen Island.

From *Cinnyris ornata microleuca* Oberholser,[61] of Pulo Taya (off the southeastern coast of Sumatra), this new subspecies may readily be distinguished by its shorter wing, duller, more brownish or grayish (less greenish or yellowish) upper parts, and larger white tips of the outer pair of rectrices.

Measurements are given in Table 39.

TABLE 39.—*Measurements of specimens of* Cinnyris ornata zapega

U.S.N.M. No.	Sex	Locality	Date	Collector	Total length [1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174865	♂	Pulo Subi [2]	June 13	W. L. Abbott	114	50. 5	33. 5	16	3. 5	14	9
174864	♂	Pulo Seraia	May 28	do	118	52. 5	35.	18	3. 5	13	9
Average of 2 males					116	51. 5	34. 3	17	3. 5	13. 5	9

[1] Measured in the flesh by the collector. [2] Type.

Including the new race described above, there are now 10 subspecies of *Cinnyris ornata*, as follows:

1. *Cinnyris ornata ornata* Lesson.

Nectarinia pectoralis HORSFIELD, Trans. Linn. Soc. London, vol. 13, pt. 1, p. 167, May, 1821. ("Java.") (*Nec* Vieillot.)

Nectarinia eximia TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, vol. 4, livr. 23, texte to pl. 138, figs. 1, 2, p. [1], June, 1822. ("Java.") (Nec *Nectarinia eximia* Horsfield.)

Cinnyris ornatus LESSON, Dictionnaire des sciences naturelles, vol. 50, p. 15, Nov., 1827. (No locality given, but type locality is Java, as the species is virtually based on *Nectarinia eximia* Temminck, since Lesson quotes "pl. 138 fig. 1 et 2 des planches coloriées de M. Temminck.")

Geographic distribution.—Java, Lombok, Flores, Sumbawa, Bali, Satonda, Bawean Island, and Kangean Islands.

2. *Cinnyris ornata heliomanis* Oberholser.

Cinnyris ornata heliomanis OBERHOLSER, Journ. Washington Acad. Sci., vol. 13, no. 11, p. 231, June 4, 1923. ("Salintukan, eastern Borneo.")

Geographic distribution.—Borneo.

[60] Nov. Zool., vol. 1, no. 2, p. 474, Apr. 16, 1894.

[61] Proc. U. S. Nat. Mus., vol. 55, p. 273, Apr. 28, 1919.

3. *Cinnyris ornata zapega* Oberholser.

Cinnyris ornata zapega Oberholser, antea, p. 112.

Geographic distribution.—Natuna Islands.

4. *Cinnyris ornata heliozeteta* Oberholser.

Cinnyris ornata heliozeteta Oberholser, Journ. Washington Acad. Sci., vol. 13, no. 11, p. 231, June 4, 1923. ("Tanjong Rengsam, Banka Island, southeastern Sumatra.")

Geographic distribution.—Banka Island;? Sumatra.

5. *Cinnyris ornata microleuca* Oberholser.

Cinnyris ornata microleuca Oberholser, Proc. U. S. Nat. Mus., vol. 55, p. 273, Apr. 28, 1919. ("Pulo Taya, off the southeastern coast of Sumatra.")

Geographic distribution.—Pulo Taya.

6. *Cinnyris ornata polyclysta* Oberholser.

Cinnyris ornata polyclysta Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 18, Oct. 26, 1912. ("Engano Island.")

Geographic distribution.—Engano Island, western Sumatra.

7. *Cinnyris ornata heliobleta* Oberholser.

Cinnyris ornata heliobleta Oberholser, Journ. Washington Acad. Sci., vol. 13, No. 11, p. 230, June 4, 1923. ("Tanjong Dungun, Trengganu, Federated Malay States.")

Geographic distribution.—Malay Peninsula, north to southern Tenasserim.

8. *Cinnyris ornata klossi* Richmond.

Arachnechthra klossi Richmond, Proc. U. S. Nat. Mus., vol. 25, p. 297, Sept. 17, 1902. ("Great Nicobar" [Island, Nicobar Islands.])

Geographic distribution.—Nicobar Islands, except the islands of Car Nicobar and Kondol.

9. *Cinnyris ornata proselia* Oberholser.

Cinnyris ornata proselia Oberholser, Journ. Washington Acad. Sci., vol 13, no. 11, p. 230, June 4, 1923. ("Car Nicobar Island, Nicobar Islands.")

Geographic distribution.—Car Nicobar Island, Nicobar Islands.

10. *Cinnyris ornata blanfordi* (Baker).

Cyrtostomus pectoralis blanfordi Baker, Bull. Brit. Orn. Club, vol. 41, no. 256, p. 71, Jan. 27, 1921. ("Kondol Is., Nicobars.")

Geographic distribution.—Kondol Island, Nicobar Islands.

CINNYRIS BRASILIANA AXANTHA, new subspecies

Subspecific characters.—Similar to *Cinnyris brasiliana*[62] *eumecis*, Oberholser, of the Anamba Islands,[63] but larger; female darker, more olivaceous (less purely yellow) below; brighter, more yellowish (less grayish) above.

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[61] For explanation of the use of this specific name instead of *Cinnyris hasseltii*, see Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 18, footnote, Oct. 26, 1912.

[63] U. S. Nat. Mus. Bull. 98, p. 63, June 30, 1917.

Description.—Type, adult male, U.S.N.M. No. 174859, Pulo Midei, Natuna Islands, May 23, 1900; Dr. W. L. Abbott. Pileum shining metallic grass green, posteriorly with golden reflections; interscapulum and sides of head and neck, velvety black; rump and upper tail coverts, shining metallic myrtle green with violet reflections; tail metallic dusky slate blue, basally duller and more brownish; wings fuscous-black, the lesser coverts shining metallic myrtle green with violet reflections; throat and jugulum, shining metallic Rood's violet with bluish reflections, which alter the general tone toward pansy violet; chin similar but decidedly more bluish; breast, upper abdomen, and sides of body, rather bright garnet brown; rest of abdomen fuscous-black; flanks, thighs, and crissum, fuscous; lining of wing brownish black.

Five specimens are in the collection, as follows:

Adult male (type), U.S.N.M. No. 174859, Pulo Midei, May 23, 1900.

Adult male, U.S.N.M. No. 174861, Pulo Midei, May 23, 1900.

Adult male, U.S.N.M. No. 174860, Pulo Midei, May 24, 1900.

Adult male, U.S.N.M. No. 174858, Pulo Seraia, May 29, 1900.

Juvenal female, U.S.N.M. No. 174862, Bunguran Island, July 24, 1900.

None of the adults show any indication of molt, but the juvenal female is in process of changing both wing quills and contour feathers, having acquired on the upper surface a large part of the first autumn plumage, and on the lower surface a considerable portion.

This new race seems to be most closely allied to *Cinnyris brasiliana eumecis*. It differs from *Cinnyris brasiliana brasiliana* of the Malay Peninsula in its larger size and in the lighter, brighter, less grayish (more yellowish) upper surface, and duller, more olivaceous lower surface of the female. Though we have seen no fully adult females of this form, our comparisons have been made with both adult and juvenal females of *Cinnyris brasiliana brasiliana* and *Cinnyris brasiliana eumecis*, and the differences above set forth are evident at a glance. Furthermore, it seems to be, except for the bill, the largest of all the known races of *Cinnyris brasiliana*.

Measurements are given in Table 40.

Doctor Abbott found this bird fairly common on Pulo Midei, and the commonest sunbird on Pulo Seraia.

TABLE 40.—*Measurements of specimens of* Cinnyris brasiliana axantha

U.S. N.M. No.	Sex	Locality	Date	Collector	Total length[1]	Wing	Tail	Exposed culmen	Height of bill at base	Tarsus	Middle toe without claw
			1900		*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*	*Mm.*
174859	♂	Pulo Midei[2]	May 23	W. L. Abbott	108	49.5	30.5	13.5	3	13	9
174861	♂	do	do	do	108	50.5	31	14	3	14	8
174860	♂	do	do	do	114	55	34	------	3	13.5	9
174858	♂	do	May 29	do	105	49.5	28.3	13.5	3	12.5	8.5
Average of 4 males					108.8	51.1	30.9	13.7	3	13.3	8.6
74862	♀ juv.	Bunguran Island.	July 24	do	96	45	28.5	14	3	12.5	8

[1] Measured in the flesh by the collector. [2] Type.

There are apparently at least 7 recognizable subspecies of *Cinnyris brasiliana*, the names and ranges of which are given below.

1. *Cinnyris brasiliana brasiliana* (Gmelin).

[*Certhia*] *brasiliana* GMELIN, Systema naturae, vol. 1, pt. 1, p. 474, July 25, 1788. ("Brasilia"; errore; type locality designated as Java by Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 18, footnote, Oct. 26, 1912.)

Nectarinia hasseltii TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, vol. 4, livr. 63, texte to pl. 376, fig. 3, p. [1], Nov. 12, 1825. ("Java.")

Cinnyris ruber LESSON, Traité d'ornithologie, p. 496, Apr. 9, 1831. (No locality; we designate Java as the type locality.)

Geographic distribution.—Java, Sumatra, and Borneo.

2. *Cinnyris brasiliana hypolampis* Oberholser.

Cinnyris brasiliana hypolampis OBERHOLSER, Smithsonian Misc. Coll., vol. 60, no. 7, p. 19, Oct. 26, 1912. ("South Pagi Island.")

Geographic distribution.—Pagi Islands and Mentawi Islands, Barussan Chain, western Sumatra.

3. *Cinnyris brasiliana oenopa* Oberholser.

Cinnyris brasiliana oenopa OBERHOLSER, Smithsonian Misc. Coll., vol. 60, no. 7, p. 18, Oct. 26, 1912. ("Mojeia River, Nias Island.")

Geographic distribution.—Nias Island, Barussan Islands.

4. *Cinnyris brasiliana mecynorhyncha* Oberholser.

Cinnyris brasiliana mecynorhyncha OBERHOLSER, Smithsonian Misc. Coll., vol. 60, no. 7, p. 19. Oct. 26, 1912. ("Simalur Island.")

Geographic distribution.—Simalur Island, Barussan Islands.

5. *Cinnyris brasiliana phayrei* (Blyth).

Nectarinia Phayrei BLYTH, Journ. Asiatic Soc. Bengal, vol. 12, no. 143, p. 1008, for Nov., 1843. ("Arracan.")

Geographic distribution.—From Tipperah in Bengal and Arakan in Burma, south through the Malay Peninsula and coastal islands, and the Mergui Archipelago, to Singapore Island.

6. *Cinnyris brasiliana eumecis* Oberholser.

Cinnyris brasiliana eumecis Oberholser, U. S. Nat. Mus. Bull. 98, p. 63, June 30, 1917. ("Pulo Siantan, Anamba Islands.")

Geographic distribution.—Anamba Islands, South China Sea.

7. *Cinnyris brasiliana axantha* Oberholser.

Cinnyris brasiliana axantha Oberholser, antea, p. 114.

Geographic distribution.—Natuna Islands, South China Sea.

*AETHOPYGA SIPARAJA OCHROPYRRHA Oberholser

Aethopyga siparaja ochropyrrha Oberholser, U. S. Nat. Mus. Bull. 98, p. 65, June 30, 1917. ("Pulo Rittan, Anamba Islands.")

This species has been recorded by Doctor Hartert [64] from Bunguran Island, where it is apparently common; and also from Pulo Laut.[65] No specimens have been examined by the present writer, but this seems to be the race most likely to occur in the Natuna Islands.

Family PLOCEIDAE

*MUNIA ATRICAPILLA BRUNNEICEPS Walden

Munia brunneiceps Walden, Trans. Zool. Soc. London, vol. 8, pt. 2, p. 73, pl. 9, fig. 1, "May" (=June), 1872. ("Macassar, Celebes.")

This race has been recorded by Doctor Hartert [66] from Bunguran Island.

UROLONCHA FUSCANS (Cassin)

Spermestes fuscans Cassin, Proc. Acad. Nat. Sci. Philadelphia, vol. 6, p. 185, Dec., 1852. ("Borneo.")

Two specimens are in Doctor Abbott's collection:

Adult female, U.S.N.M. No. 174736, Pulo Sirhassen, June 6, 1900. "Feet leaden blue; upper mandible black; lower mandible leaden." Length in flesh, 116 mm.

Juvenal female, U.S.N.M. No. 174735, Pulo Sirhassen, June 9, 1900. Length in flesh, 116 mm.

Both these are in process of molt of both quill and contour feathers.

The juvenal differs from the adult chiefly in the less blackish shade of underparts and sides of head. The mandible appears to be, in the dried skin at least, lighter and more brownish.

Doctor Abbott reported the species common in the clearings and in the coconut plantations.

Doctor Hartert has reported it [67] from Bunguran Island, on the basis of a specimen collected by A. Everett.

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[64] Nov. Zool., vol. 1, no. 2, p. 475, Apr. 16, 1894.
[65] Nov. Zool., vol. 2, no. 3, p. 469, Aug. 17, 1895.
[66] Nov. Zool., vol. 2, no. 3, p. 469, Aug. 17, 1895.
[67] Nov. Zool., vol. 2, no. 3, p. 469, Aug. 17, 1895.

Family DICAEIDAE

*CHARITOCIRIS MACULATA MACULATA (Temminck)

Pardalotus maculatus TEMMINCK, Nouveau recueil de planches coloriées d'oiseaux, vol. 3, livr. 101, texte to pl. 600, fig. 3, p. [1], 1836. ("Bornéo.")

Reported by Hartert [68] from specimens taken on Bunguran Island.

*CHARITOCIRIS XANTHOPYGIA XANTHOPYGIA (Salvadori)

Prionochilus xanthopygius SALVADORI, Atti R. Accad. Torino, vol. 3, p. 416, figs. 1, 2, 1868, after Mar. 22. ("Borneo, Sarawak.")

A specimen of this species taken on Mount Ranay, Bunguran Island, at 1,000 feet altitude in August, 1894, has been recorded by Doctor Hartert.[69]

CHARITOCIRIS PERCUSSA IGNICAPILLA (Eyton)[70]

Dicaeum ignicapilla EYTON, Proc. Zool. Soc. London, vol. 7, p. 105, Nov., 1839. ("Malaya.")

The birds of this species from the Natuna Islands are apparently not subspecifically separable from birds of the Malay Peninsula. Doctor Abbott obtained the following two specimens:

Juvenal male, U. S. N. M. No. 174840, Bunguran Island, July 3, 1900. "Bill orange yellow, brown at tip: feet dull leaden blue." Length in flesh, 101 mm.

Juvenal female, U. S. N. M. No. 174839, Bunguran Island, July 27, 1900. Length in flesh, 96 mm.

The male in juvenal plumage is somewhat like the adult female, but lacks the orange crown patch; is of a duller, less yellowish olive-green above; and is much duller, more grayish, less yellowish below.

The female in juvenal plumage is much duller, more grayish above than the juvenal male, and much more grayish (less yellowish) below.

There are indications of molt among the contour feathers of both these young birds.

DICAEUM TRIGONOSTIGMUM MEGASTOMUM Hartert

Dicaeum trigonostigma megastomum HARTERT, Bull. Brit. Orn. Club, vol. 38, no. 234, p. 74, May 22, 1918. ("Natuna Islands, between Borneo and the Malay Peninsula.")

There is in Doctor Abbott's collection a single juvenal male, No. 174838, taken at Gunong Ranay on Bunguran Island, July 20, 1900. It is about half molted into adult plumage.

There are now recognizable 11 races of *Dicaeum trigonostigmum*, as follows:

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[68] Nov. Zool. vol. 1, no. 2, p. 474, Apr. 16, 1894.

[69] Nov. Zool., vol. 2, no. 3, p. 468, Aug. 17, 1895.

[70] For the use of the generic name *Charitocíris* in place of *Prionochilus* Strickland, *see* Oberholser, Ohio Journ. Sci., vol. 23, no. 6, pp. 289, 290, Dec. 21, 1923.

1. *Dicaeum trigonostigmum trigonostigmum* (Scopoli).

Certhia trigonostigma Scopoli, Deliciae florae et faunae Insubricae, pt. 2, p. 91, 1786. (Based on "Ibidem p. 209, Tab. 117, f. 2" [=*Le grimpereau sifleur de la Chine*, Sonnerat, Voyage aux Indes Orientales et à la Chine, vol. 2, p. 210, pl. 117, fig. 2, 1782; we designate the port of Malacca as the type locality].)

Geographic distribution.—Malay Peninsula from about latitude 10° N., south to Singapore Island and Linga Island.

2. *Dicaeum trigonostigmum rubropygium* Baker.

Dicaeum trigonostigma rubropygium Baker, Bull. Brit. Orn. Club, vol. 41, no. 259, p. 108, Apr. 27, 1921. ("Mergui.")

Geographic distribution.—Malay Peninsula north of latitude 10° N., north to southwestern Siam, southern Burma, Assam, and Lakhimpur in the Northwestern Provinces of India.

3. *Dicaeum trigonostigmum croceoventre* Vigors.

Dic[*aeum*]. *croceoventre* [Vigors], *in* Raffles's Memoir of Sir Thomas Stamford Raffles, p. 673, 1830. ("Sumatra.")

Geographic distribution.—Sumatra.

4. *Dicaeum trigonostigmum dayakanum* Chasen and Kloss.

Dicaeum trigonostigma dayakana Chasen and Kloss, Journ. f. Orn., Ergänzungsband, 2, p. 121, Oct. 29, 1929. ("Bettotan near Sandakan, British North Borneo.")

Geographic distribution.—Borneo.

5. *Dicaeum trigonostigmum antioproctum* Oberholser.

Dicaeum trigonostigmum antioproctum Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 21, Oct. 26, 1912. ("Simalur Island.")

Geographic distribution.—Simalur Island, Barussan Islands, western Sumatra.

6. *Dicaeum trigonostigmum melanthe* Oberholser.

Dicaeum trigonostigmum melanthe Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 21, Oct. 26, 1912. ("Pulo Lasia.")

Geographic distribution.—Pulo Lasia, Barussan Islands, western Sumatra.

7. *Dicaeum trigonostigmum lyprum* Oberholser.

Dicaeum trigonostigmum lyprum Oberholser, Smithsonian Misc. Coll., vol. 60, no. 7, p. 21, Oct. 26, 1912. ("Lafau, Nias Island.")

Geographic distribution.—Nias Island, Barussan Islands, western Sumatra.

8. *Dicaeum trigonostigmum pagense* Oberholser.

Dicaeum trigonostigmum pagense Oberholser, Journ. Washington Acad. Sci., vol. 16, no. 19, p. 520, Nov. 18, 1926. ("South Pagi Island, Barussan Islands, western Sumatra.")

Geographic distribution.—Pagi group, Barussan Islands, western Sumatra.

9. *Dicaeum trigonostigmum flaviclune* Hartert.

Dicaeum trigonostigma flaviclunis Hartert, Bull. Brit. Orn. Club, vol. 38, no. 234, p. 75, May 22, 1918. ("Karangbolong, South Java.")

Geographic distribution.—Islands of Java and Bali.

10. *Dicaeum trigonostigmum megastomum* Hartert.

Dicaeum trigonostigma megastomum Hartert, Bull. Brit. Orn. Club, vol. 38, no. 234, p. 74, May 22, 1918. ("Natuna Islands, between Borneo and the Malay Peninsula.")

Geographic distribution.—Natuna Islands, South China Sea.

11. *Dicaeum trigonostigmum hypochloum* Oberholser.

Dicaeum trigonostigmum hypochloum Oberholser, U. S. Nat. Mus. Bull. 98, p. 67, June 30, 1917. ("Pulo Siantan, Anamba Islands.")

Geographic distribution.—Anamba Islands, South China Sea.

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